CRPL-F32

IONOSPHERIC DATA

ISSUED
APRIL 1947

PREPARED BY CENTRAL RADIO PROPAGATION LABORATORY
National Bureau of Standards
Washington, D.C.

CRPL-F 32 CENTRAL RADIO PROPAGATION LABORATORY
NATIONAL BUREAU OF STANDARDS
WASHINGTON, D.C.
Issued
20 Apr. 1947

IONOSPHERIC DATA

CONTENTS

TERMINOLOGY AND SCALING PRACTICES

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology" in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

> L or l = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 Jan. 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the CRPL, for the Canadian stations, and for all others sending to the CRPL detailed tabulations from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:
   Values missing because of A, B, C or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:
   Values missing because of E are counted as equal to or less than the lower limit of the recorder.
   Values missing because of D are counted as equal to or greater than the upper limit of the recorder.
   Values missing because of G are counted:
   1. For $f^{o}F2$, as equal to or less than $f^{o}F1$.
   2. For h'F2, as equal to or greater than the median.

Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median $f^{o}E$, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered as doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

It is expected that this practice will be of assistance in evaluating the monthly median Washington data.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 66 and figures 1 to 121 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data:

Australian Council for Scientific and Industrial Research,
Radio Research Board:
- Brisbane, Australia
- Canberra, Australia
- Cape York, Australia
- Hobart, Tasmania
- Townsville, Australia

British Department of Scientific and Industrial Research,
Radio Research Board:
- Burghead, Scotland
- Oslo, Norway
- Slough, England
- Tromso, Norway

Canadian Radio Wave Propagation Committee:
- Churchill, Canada
- Clyde, Baffin I.
- Ottawa, Canada
- Portage la Prairie, Manitoba
- Prince Rupert, Canada
- St. John's, Newfoundland

New Zealand Radio Research Committee:
- Campbell I.
- Christchurch (Canterbury University College Observatory)
- Fiji Is.
- Kermadec Is.
- Pitcairn I.
- Rarotonga I.

South African Council for Scientific and Industrial Research:
- Capetown, Union of S. Africa
- Johannesburg, Union of S. Africa

Scientific Research Institute of Terrestrial Magnetism, Moscow, U.S.S.R.:
- Alma Ata, U.S.S.R.
- Bay Tiksey, U.S.S.R.
- Bukhta Tikhaya, U.S.S.R.
- Chita, U.S.S.R.
- Leningrad, U.S.S.R.
- Moscow, U.S.S.R.
- Sverdlovsk, U.S.S.R.
- Tomsk, U.S.S.R.

Carnegie Institution of Washington (Department of Terrestrial Magnetism):
Huancayo, Peru
Watheroo, W. Australia

United States Army Signal Corps:
Okinawa I.
Shibata, Japan
Tokyo, Japan
Yamakawa, Japan

National Bureau of Standards (Central Radio Propagation Laboratory):
Adak, Alaska
Baton Rouge, Louisiana (Louisiana State University)
Boston, Massachusetts (Harvard University)
Fairbanks, Alaska (University of Alaska, College, Alaska)
Guam I.
Maui, Hawaii
Palmyra I.
San Francisco, California (Stanford University)
San Juan, Puerto Rico (University of Puerto Rico)
Trinidad, British West Indies
Washington, D. C.
White Sands, New Mexico
Wuchang, China (National Wuhan University)

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Peshawar, India

Indian Council of Scientific and Industrial Research,
Radio Research Committee:
Calcutta, India

Radio Wave Research Laboratories, Central Broadcasting Administration:
Chungking, China
Lanchow, China
Peiping, China

French Ministry of Naval Armaments (Section for Scientific Research):
Fribourg, Germany

Philippine Republic, Department of National Defense:
Leyte, Philippine Is.

Beginning with CRPL-F26, publication of tables of so-called "provisional data," reported to the CRPL by telephone or telegraph was discontinued. The reason for this change in policy is that users of the data hitherto published in this form receive them through established channels sooner than they reach them in the F-series. Furthermore, having two sets of data, "provisional" and "final," for the same station for the same month leads to confusion.

It must be emphasized that there is no change in the methods used for rapid reporting and exchange of data. The change has to do only with the printing of provisional data in the F-series.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

a. Differences in scaling records where spread echoes are present.

b. Omission of values where $f^{o}F2$ is less than or equal to $f^{o}F1$, leading to erroneously high values of monthly averages or median values.

c. Omission of values where critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. Predictions for individual stations used to construct the charts may be more accurate than the values read from the chart since some smoothing of the contours is necessary to allow for the longitude effect within a zone. The following predicted smoothed 12-month running-average Zurich sunspot numbers were used in constructing the contour charts, beginning with August 1945:

Month	Predicted Sunspot No.	Month	Predicted Sunspot No.
February 1947	90	April 1946	62
January 1947	88	March 1946	51
December 1946	85	February 1946	46
November 1946	83	January 1946	42
October 1946	81	December 1945	38
September 1946	79	November 1945	36
August 1946	77	October 1945	23
July 1946	73	September 1945	22
June 1946	67	August 1945	20
May 1946	67		

IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in tables 67 to 78 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

IONOSPHERE DISTURBANCES

Table 79 presents ionosphere character figures for Washington, D.C., during March 1947, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, magnetic K-figures, which are usually covariant with them.

Table 80 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during March 1947.

Table 81 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Brentwood and Somerton, England, receiving stations of Cable and Wireless Ltd. during February 1947 and March 1947.

Table 82 gives provisional radio propagation quality figures for North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, February 1947, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day Cheltenham, Maryland, geomagnetic K-figures.

The radio propagation quality figures for the North Atlantic are prepared from radio traffic and ionospheric data reported to the CRPL, in the manner described in detail in report IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued 1 February 1946.

The radio propagation quality figures for the North Pacific are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner similar to that of IRPL-R31. The master scale of IRPL-R31 was used to formulate conversion scales for the North Pacific reports. Currently, beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales rather than, as hitherto, from the conversion scales of report IRPL-R13, "Ionospheric and Radio Propagation Disturbances, October 1943 through February 1945," issued 24 May 1945.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half-day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question. Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency usage is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic, or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half day in either of the two general areas.

AMERICAN RELATIVE SUNSPOT NUMBERS

Table 83 presents the daily median values of relative sunspot numbers as reported by American observers for March 1947. The reports have been reduced, by appropriate constants, approximately to the Zurich scale of relative sunspot numbers. The monthly relative sunspot number is the mean of the daily median values listed in the table. This method was devised by Mr. A. H. Shapley, while a member of the staff of the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Details will be found in his article, "American Observations of Relative Sunspot Numbers in 1945 for Application to Ionospheric Prediction," Popular Astronomy, Vol. 54, No. 7, pp. 351-358, August 1946. The criteria for A observers have been modified slightly, beginning with September 1946. In order for an observer's report to be included in the American sunspot numbers, the mean deviation of the reduction factors for his observations for the four preceding months must have been within 15% of the 4-month running mean of his reduction factors, rather than within an interval of ± 0.16 of that running mean. This avoids favoring observers with small reduction factors and discriminating against observers with large reduction factors. In addition sunspot numbers must have been reported for at least one-half of the month during three-quarters of the preceding year. This will tend to restrict the observers to those whose observations are consistent from month to month without rejecting the work of observers for whom weather conditions are unsatisfactory for observations during some months of the year.

SOLAR CORONAL INTENSITIES OBSERVED AT CLIMAX, COLORADO

In table 84 the intensities of the green (λ5303A), first red (λ6374A), and second red (λ6704A) lines of the solar corona as observed during March 1947, by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, are given for every 5° from astronomical north for each day on which observations were possible. An arbitrary intensity-scale of approximately 0 to 40 is used. To convert from astronomical north and to determine the positions relative to the solar rotational equator subtract the algebraic value of the position-angle of the solar axis. This quantity varies from +26 to -26 degrees during the year, and is tabulated in the nautical almanacs. If observations are uncertain, the initials l.w. (low weight) will follow the date. The time of observation in hours GCT is listed. Dashes indicate that the intensity for that position is below the observable threshold. Absence of observation made at a given position is indicated by X.

ERRATUM

Calibration of the height scale at Adak, Alaska disclosed that virtual heights above 120 km reported through January 1947 were about 5 percent low.

Table 1

Washington, D.C. (39.0°N, 77.5°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	320	(5.8)						(2.6)
07	275	7.8						2.9
08	260	9.6						3.0
09	260	10.8						2.9
10	(270)	11.8	(270)					2.8
11	(275)	12.4	255	(5.5)				2.8
12	(300)	12.5		(5.4)				2.7
13	(280)	12.5	(250)					2.7
14	(260)	12.4						2.6
15	270	12.2	(265)					2.7
16	260	12.1						2.7
17	265	12.0						2.7
18	260	11.5						2.8
19								
20								
21								
22								
23								

Time: 75.0°W.
Sweep: 3.1 Mc to 17.0 Mc. Manual operation.

Table 2

Fairbanks, Alaska (64.9°N, 147.8°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	3.4					3.8	2.6
01	330	3.1					3.7	2.6
02	350	3.3					4.0	2.6
03	350	3.9					4.6	2.5
04	335	4.0					3.8	2.6
05	320	4.5					3.0	2.5
06	330	4.0				1.4	2.6	2.5
07	300	4.8				1.6	2.6	2.7
08	270	5.8				2.0	2.5	2.9
09	250	7.0				2.4	3.0	3.0
10	245	8.3				2.5	2.8	3.0
11	250	9.4				2.7	2.8	3.0
12	240	10.0				2.7		3.0
13	242	11.0				2.7		2.9
14	240	11.6				2.5	2.9	2.9
15	230	11.6				2.2	2.6	2.9
16	230	11.5				1.8	2.4	3.0
17	220	10.8				1.0	2.8	3.0
18	220	9.0					2.8	3.0
19	230	6.5					2.9	2.9
20	240	5.0					2.8	3.0
21	260	4.2					2.9	2.9
22	280	3.9					3.0	2.8
23	285	3.9					3.4	2.9

Time: 150.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.

Table 3

Adak, Alaska (51.9°N, 176.6°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	290	3.2						2.8
01	300	3.2						2.7
02	310	3.3						2.6
03	320	3.4						2.6
04	310	3.3						2.6
05	280	3.4						2.6
06	290	3.2						2.7
07	230	6.4			155	2.0		3.0
08	220	9.4			120	(2.4)		3.4
09	220	11.4			120	2.8		3.3
10	210	13.0			110	3.2		3.2
11								
12	220	13.8	210		110	3.4		3.1
13	220	13.1	220		120	3.3		3.1
14	220	13.1			120	3.2		3.1
15	220	12.4			115	3.0		(3.1)
16	210	11.8			120	2.6		3.2
17								
18	210	9.0						3.2
19	210	7.4						3.2
20	215	5.2						3.2
21	240	3.9						3.1
22	260	3.6						3.0
23	260	3.4						2.9

Time: 180.0°W.
Sweep: Manual operation.

Table 4

Ottawa, Canada (45.5°N, 75.8°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	6.3						2.8
01	300	6.3						2.8
02	290	6.2						2.8
03	280	5.3						2.8
04	290	5.0						2.9
05	280	5.0						2.9
06	270	5.0						2.9
07	260	6.3						2.9
08	240	8.2			120	2.3		3.0
09	230	10.7			120	3.2		2.9
10	230	12.1	220	4.6	120	3.5		2.9
11	230	13.2		4.8	120	3.7		2.8
12	230	13.6			120	3.8		2.8
13	240	13.5			120	3.9		2.8
14	240	13.4			120	3.7		2.8
15	240	13.2			120	3.4		2.7
16	250	13.0			125	3.0		2.8
17	240	12.4			140	2.3		2.8
18	240	11.9						2.8
19	240	10.2						2.8
20	240	9.2						2.8
21	250	7.6						2.8
22	260	7.0						2.8
23	270	6.6						2.8

Time: 75.0°W.
Sweep: 1.7 Mc to 18.0 Mc. Manual operation.

Table 5

Boston, Massachusetts (42.4°N, 71.2°W) February 1947

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	295	6.6						2.6
01	285	6.3						2.6
02	280	6.3						2.6
03	275	5.9						2.7
04	265	5.8						2.7
05	260	5.1						2.7
06	260	5.0						2.7
07	260	6.9			132	2.2		2.9
08	250	10.8			135	2.8		3.0
09	250	12.0			132	2.9		3.0
10	250	12.8			135	3.0		2.9
11	255	13.0			135	3.2		2.9
12	255	13.5			135	3.5		2.8
13	255	13.0			125			2.7
14	260	13.0			135	3.4		2.7
15	260	13.0			135	3.2		2.7
16	255	12.8			135	2.6		2.8
17	250	12.0			140	1.8		2.8
18	250	11.1						2.7
19	250	9.9						2.8
20	250	8.7						2.7
21	260	7.8						2.7
22	270	6.9						2.6
23	280	6.7						2.6

Time: 75.0°W.
Sweep: 0.85 Mc to 13.75 Mc in 1 minute.

Table 6

San Francisco, California (37.4°N, 122.2°W) February 1947

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	280	4.1						2.8
01	300	3.8						2.8
02	300	3.8						2.8
03	300	3.8						2.8
04	300	3.7						2.8
05	300	3.6						2.8
06	300	3.6						2.8
07	250	6.0						3.0
08	230	9.3			120	2.7		3.2
09	220	11.2			120	3.2		3.2
10	220	11.6			110	3.5		3.1
11	220	12.0			110	3.8		3.1
12	220	12.2			120	3.8		3.0
13	220	12.0		5.9	120	3.8		3.0
14	225	11.8	220	6.5	120	3.7		2.9
15	230	12.0			120	3.5		2.9
16	230	11.7			120	3.0		3.0
17	220	11.2			120	2.4		3.0
18	220	10.2						2.9
19	220	9.0						3.0
20	220	7.2						3.2
21	225	6.0						3.1
22	250	5.0						2.9
23	260	4.5						2.9

Time: 120.0°W.
Sweep: 1.5 Mc to 18.5 Mc in 4.5 minutes.

Table 7

White Sands, New Mexico (32.6°N, 106.5°W) February 1947

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	280	4.4						2.7
01	280	4.3						2.7
02	290	4.2						2.7
03	280	4.2						2.7
04	275	4.0						2.7
05	280	3.8						2.6
06	280	4.2						2.7
07	260	7.1	220	2.2	130	2.0		(2.8)
08	260	9.8	230		120	2.8	2.7	(3.1)
09	260	11.0	230		120	3.3		3.0
10	280	11.4	230		120	3.5		3.0
11	280	11.7	240		120	3.7		3.0
12	300	12.9	240		120	3.8		(2.8)
13	295	11.8	240		120	3.8		(2.9)
14	300	12.2	240		120	3.7		2.8
15	300	11.9	240		120	3.6		2.8
16	300	11.4	240		120	3.0	3.6	2.9
17	280	11.1	240		120	2.4	2.5	2.9
18	230	10.4						2.9
19	220	8.8						3.0
20	220	7.4						3.1
21	230	6.4						2.9
22	250	5.1						2.8
23	275	4.8						2.7

Time: 105.0°W.
Sweep: 0.79 Mc to 14.0 Mc in 2 minutes. Automatic.

Table 8*

Baton Rouge, Louisiana (30.5°N, 91.2°W) February 1947

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	(290)	(4.9)						(2.9)
01	(300)	(4.6)						(3.0)
02	(290)	(4.5)						(3.0)
03	(300)	(4.3)						(3.0)
04	(285)	(4.2)						(3.0)
05	(300)	(4.3)						(2.9)
06	(300)	(4.0)						(3.0)
07	(260)	(7.1)						(3.1)
08	(260)	(9.4)	(240)		130	2.3		(3.1)
09	(270)	(10.3)	(240)		120	3.0		(3.0)
10	(270)	(11.0)	(240)		120	3.4		(3.0)
11	(270)	(11.3)	(240)		120	(3.5)		(3.0)
12	(270)	(11.2)	(240)	(5.3)	120	3.6		(3.0)
13	(285)	(11.0)	(240)		120	3.6		(3.0)
14	(285)	(11.3)	240		120	3.6		(3.0)
15	(285)	(11.0)	(245)		120	3.2		(3.0)
16	(290)	(10.4)			120			(3.0)
17	(260)	(9.7)			130			(3.1)
18	(260)	(9.5)						(3.0)
19	(250)	(9.0)						(3.0)
20	(250)	(8.0)						(3.0)
21	(260)	(6.1)						(2.9)
22	(270)	(5.0)						(2.9)
23	(280)	(5.0)						(2.8)

Time: 90.0°W.
Sweep: 2.0 Mc to 15.0 Mc in 5 minutes.
*Data taken between February 3rd and 13th.

Table 9

Maui, Hawaii (20.8°N, 156.5°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	280	5.4					2.8	2.9
07	245	8.5					3.4	3.1
08	240	11.7	230	3.9		3.1	3.9	3.0
09	245	13.5	230	4.4		3.4	4.4	3.0
10	245	14.3	225	4.8		3.8	4.6	2.9
11	250	14.5	220	5.0		3.9	4.7	2.8
12	248	15.0	210	5.0		4.0	4.8	2.8
13	250	14.5	218	5.0		3.9	4.6	2.8
14	250	15.0	220	4.9		3.8	4.8	2.8
15								
16	255	11.0	205	4.2			(3.8)	3.1
17								
18	250	10.2					3.4	3.4
19								
20								
21								
22								
23								

Time: Local.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 10

San Juan, Puerto Rico (18.4°N, 66.1°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		7.3						2.6
01		6.9						2.7
02		6.5						2.7
03		5.8						2.7
04		4.9						2.6
05		4.6						2.4
06		4.6						2.6
07	290	7.2						2.8
08	290	10.8		2.9				2.7
09	300	11.7		4.0		3.2	3.8	2.7
10	310	12.6				3.5		2.7
11	340	12.7				3.6	3.8	2.6
12	350	12.7				3.7		2.5
13	365	12.6				3.8	4.0	2.5
14	370	12.3				3.7		2.4
15	360	12.1				3.5		2.4
16	350	12.1				3.4	4.0	2.5
17	325	12.0					3.7	2.5
18	305	11.7						2.5
19	300	10.0						2.7
20		8.8						2.6
21		7.9						2.5
22		8.0						(2.6)
23		8.0						2.6

Time: 60.0°W.
Sweep: 2.8 Mc to 14.0 Mc in 8 minutes.

Table 11

Trinidad, Brit. West Indies (10.6°N, 61.2°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	240	9.6						3.0
01	240	8.3						3.1
02	240	7.6						3.2
03	230	5.4						3.1
04	250	4.1						2.8
05	290	3.8						2.8
06	265	4.4					2.2	2.9
07	250	8.7			120	2.2	3.1	3.2
08	240	11.7			120	3.0	3.6	3.1
09	250	13.2	230	4.8	120	3.5	4.0	3.0
10	260	13.6	220	5.2	120	3.8	4.3	2.9
11	270	13.5	220	5.5	120	4.0	4.4	2.8
12	280	13.8	220	5.6	120	4.0	4.6	2.7
13	280	13.8	220	(5.5)	120	4.0	4.6	2.6
14	300	13.7	220	5.4	120	4.0	4.4	2.6
15	305	13.8	230	(5.5)	120	3.7	4.6	2.6
16	280	14.0	240		120	3.4	4.5	2.6
17	260	13.8			120	3.0	3.9	2.7
18	260	13.2					3.0	2.7
19	260	12.4					2.9	2.7
20	265	11.8					2.4	2.7
21	260	11.4						2.6
22	270	10.6						2.7
23	260	10.8						2.8

Time: 60.0°W.
Sweep: 1.2 Mc to 15.5 Mc. Manual operation.

Table 12

Palmyra I. (5.9°N, 162.1°W) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	245	(12.2)					3.7	(3.2)
01	235	(11.1)					3.1	(3.1)
02	235	(8.8)					2.7	2.9
03	240	8.2					2.6	2.9
04	235	7.4					3.6	3.0
05	245	7.3					3.7	3.0
06	245	6.3					2.4	3.0
07	260	9.3			125	2.4	3.2	2.9
08	240	11.6			110	3.2	4.1	2.7
09	235	13.2	225		110	3.8		2.6
10	300	13.5	210	5.5	110	4.0		2.5
11	300	12.6	210	5.5	105			2.4
12	360	12.4	208	7.1	110	4.3		2.4
13	378	13.0	210	7.0	105	4.3		2.3
14	385	13.6	225	6.8	108	4.2		2.4
15	400	14.0	220	6.8	110	4.0		2.5
16	400	14.3	232	7.2	110	3.5		2.5
17	252	14.4	250		110	3.1	3.4	2.5
18	275	14.4			142	2.2	3.9	2.6
19	330	14.3					3.6	2.5
20	365	13.5					2.3	2.4
21	325	13.5					2.3	2.6
22	295	13.6					3.5	2.8
23	270	13.7					3.5	3.0

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1.6 minutes; supplemented by manual operation above 13.0 Mc.

Table 13

Clyde, Baffin I. (70.5°N, 68.6°W) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	4.6						
01	340	4.4						
02	310	3.5						
03	320	3.8						
04	340	3.6						
05	340	3.6						
06	300	4.4						
07	300	3.8						
08	300	4.7						
09	300	5.2						
10	300	5.6						
11	285	6.6						
12	290	6.8						
13	290	8.8						
14	290	8.2						
15	300	8.6						
16	300	7.4						
17	300	5.8						
18	290	5.8						
19	300	5.4						
20	300	5.6						
21	300	5.0						
22	300	4.8						
23	320	4.4						

Time: 75.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute; 1.9 Mc to 13.0 Mc, manual operation.

Table 14

St. John's, Newfoundland (47.6°N, 52.7°W) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	3.7						2.8
01	270	3.2						2.8
02	270	3.6					2.2	2.7
03	260	3.1					2.2	2.8
04	260	3.1					2.5	2.8
05	250	3.1					2.5	2.8
06	240	3.1					2.7	2.8
07	230	3.3					1.8	2.9
08	220	6.0					2.7	3.2
09	220	9.5			110	2.5	2.6	3.4
10	220	11.0			110	2.8	2.9	3.4
11	210	11.6			110	3.1		3.4
12	210	12.3			110	3.1		3.3
13	210	12.4			110	3.1		3.3
14	220	11.9			100	3.0	3.2	3.3
15	220	11.6			105	2.8	3.4	3.4
16	220	11.3			105	2.4	2.8	3.3
17	210	10.8					2.4	3.3
18	220	9.4					1.7	3.2
19	220	9.0					1.7	3.2
20	230	6.8					2.0	3.1
21	230	5.2					2.0	3.1
22	245	4.6						2.9
23	260	4.4						3.0

Time: 52.5°W.
Sweep: 1.2 Mc to 20.0 Mc. Manual operation.

Table 15

Shibata, Japan (37.9°N, 139.3°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	3.6					2.2	3.0
01	280	3.5					2.0	3.0
02	270	3.4					2.0	3.0
03	250	3.4					1.4	3.1
04	250	3.3					1.2	3.0
05	265	3.2						3.0
06	240	3.2						3.2
07	220	6.2			100	1.7	1.7	3.5
08	210	9.2	220		100	2.2	1.9	3.6
09	210	11.0	220		100	3.0		3.5
10	220	12.4	210		100	3.3	2.5	3.4
11	220	11.9	210		100	3.4	3.4	3.4
12	220	10.8	210		100	3.5		3.3
13	220	10.5	210		100	3.6		3.2
14	230	10.7	215		100	3.3		3.2
15	230	10.2	220		100	3.1		3.4
16	220	9.2	220		100	2.4		3.3
17	210	8.6			100	1.6	1.9	3.4
18	200	7.7					2.2	3.5
19	200	6.0					2.2	3.5
20	215	4.1					2.4	3.3
21	250	4.0					2.2	3.1
22	250	4.0					2.1	3.1
23	265	3.7					2.1	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 15.0 Mc.

Table 16

Tokyo, Japan (35.7°N, 139.5°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	255	3.8						3.0
01	260	3.8						3.0
02	260	3.5						3.0
03	250	3.4						3.0
04	250	3.2						2.8
05	280	3.2						2.9
06	240	3.4						3.2
07	200	6.7				1.8	2.2	3.4
08	200	9.2			100	2.5		3.6
09	200	11.0	200		100	3.1	2.9	3.5
10	210	12.2	200		100	3.4	3.4	3.5
11	210	11.9	200		100	3.5	3.0	3.4
12	220	11.5	200		100	3.6	3.4	3.2
13	215	10.7	200		100	3.5		3.2
14	220	10.8	200		100	3.4		3.2
15	220	10.2	210		100	3.1	3.1	3.3
16	205	9.4			100	2.4	3.0	3.4
17	205	8.9			100	1.9	3.0	3.3
18	200	7.4					3.0	3.4
19	200	5.9					2.5	3.4
20	210	4.6					2.3	3.2
21	230	4.4					2.4	3.1
22	250	4.2					2.2	3.0
23	250	4.2					2.5	3.0

Time: 135.0°E.
Sweep: 1.3 Mc to 15.0 Mc. Manual operation.

Table 17

Yamakawa, Japan (32.2°N, 130.6°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	290	5.1						
01	300	4.4						
02	300	4.3						
03	290	3.8						
04	280	3.5						
05	340	3.2						
06	340	3.3						
07	290	5.3						
08	230	9.3			110	2.5	2.6	
09	240	11.2	230	3.8	110	3.2	4.0	
10	250	13.6	230	4.6	110	3.7	4.7	
11	250	13.8	235		110	3.8	4.8	
12	260	14.0	230		110	4.0	4.7	
13	260	13.7	230		110	3.8	4.7	
14	270	13.4	230		110	3.6	4.8	
15	260	12.8	240		110	3.6	4.3	
16	250	11.9	245		120	3.0	3.8	
17	240	10.9	240	3.4	110	2.6	3.3	
18	240	9.6					2.8	
19	230	8.3					3.0	
20	220	7.7					2.8	
21	240	6.5						
22	270	5.7						
23	290	5.4						

Time: 135.0°E.
Sweep: 2.0 Mc to 17.0 Mc in 15 minutes. Manual operation.

Table 18

Wuchang, China (30.6°N, 114.4°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	4.3						2.8
01	290	4.4						2.8
02	270	4.4						2.9
03	250	3.8						3.0
04	240	3.4						3.1
05	300	3.1						2.6
06	300	3.0						2.8
07	260	4.5						2.8
08	230	9.4			120	2.2		3.2
09	230	11.5			110	2.9		3.2
10	230	13.0	220		110	3.2		3.1
11	230	13.4	220	5.0	110	3.6		3.1
12	235	13.0	230	5.0	110	3.8		3.0
13	250	13.0	220	6.1	110	3.7		2.9
14	265	13.5	220	5.4	110	3.5		2.9
15	270	13.0	230	5.6	110	3.4		3.0
16	240	12.0	240	4.2	110	3.0		3.0
17	230	11.0			120	2.5		3.1
18	220	9.6			110		2.0	3.1
19	220	9.0					2.7	3.1
20	220	8.0					2.2	3.1
21	220	6.8						3.0
22	240	5.6					1.6	2.9
23	260	5.2						2.8

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc. Manual operation.

Table 19

Okinawa I. (26.3°N, 127.8°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		6.7					2.3	2.9
01		5.7					2.3	2.9
02		5.4					2.3	2.9
03		5.1					2.3	2.9
04		4.2					2.2	3.1
05		3.3					2.2	2.6
06		3.3					2.3	2.7
07		5.0					2.3	2.7
08		9.8				2.5	3.1	3.2
09		12.0				(3.0)	3.9	3.1
10		13.4					4.4	3.0
11		13.4					4.6	2.9
12		14.4					4.6	2.8
13		14.6				(4.0)	4.7	2.8
14		15.0				3.8	4.6	2.8
15		14.7				3.5	4.6	2.8
16		14.4					4.2	2.9
17		13.0					3.5	3.0
18		11.6					2.9	3.0
19		10.7					3.0	3.0
20		10.0					2.9	3.0
21		9.2					2.6	3.1
22		8.6					2.4	3.0
23		7.5					2.4	2.9

Time: 135.0°E.
Sweep: Manual operation.

Table 20

San Juan, Puerto Rico (18.4°N, 66.1°W) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		5.4						2.7
01		5.2						2.8
02		4.8						2.8
03		4.2						2.8
04		3.8						2.6
05		3.9						2.6
06		4.3						2.6
07	300	6.9						2.9
08	285	10.0		2.8				3.0
09	280	11.8				3.2		2.9
10	280	11.4				3.4	3.6	2.9
11	300	10.6				3.6		2.8
12	335	10.8				3.6		2.7
13	340	10.5				3.8		2.7
14	330	10.4				3.6		2.6
15	330	10.3				3.5	4.2	2.6
16	320	10.5				3.2	4.1	2.7
17	300	10.3						2.8
18	280	9.4						2.9
19	290	8.0						2.9
20		7.6						2.8
21		6.7						2.7
22		5.9						2.7
23		5.3						2.7

Time: 60.0°W.
Sweep: 2.8 Mc to 14.0 in 8 minutes.

Table 21

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	6.7						2.8
01	260	6.3						2.8
02	250	5.9						2.9
03	250	5.4						2.8
04	270	4.6						2.8
05	280	4.4						2.8
06	240	6.4			(110)	2.2	2.8	3.0
07	250	8.0	230	4.4	100	3.0		2.9
08	310	9.2	220	5.2	100	3.5		2.8
09	310	10.3	200	5.4	100	3.8		2.7
10	340	10.9	210	5.6	100	(3.9)		2.7
11	360	11.0	210	5.8	100			2.6
12	370	11.2	200	5.9	100	(4.2)		2.6
13	360	11.2	200	5.8	100	(4.2)		2.6
14	360	11.3	205	5.8	100	(4.0)		2.7
15	340	10.9	210	5.4	100	(3.9)		2.7
16	330	9.9	210	5.2	100	3.6		2.7
17	340	9.2	210	5.0	100	3.2		2.7
18	290	8.9	240	3.7	100	2.6	3.2	2.8
19	260	9.0						2.8
20	250	8.9						(2.9)
21	250	8.2						2.8
22	260	7.6						2.8
23	270	7.2						2.8

Time: 30.0°E.
Sweep: 2.0 Mc to 15.0 Mc in 8 seconds.

Table 22

Tromso, Norway (69.7°N, 18.9°E) December 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	(285)	4.1					(1.9)	
07	(274)	3.6						
08	260	4.8				1.3		
09	256	6.6				1.5		
10	246	8.2				1.6		
11	240	8.7				1.6		
12	246	8.6				1.6		
13	230	8.1				1.5		
14	240	6.4					1.7	
15	245	5.5					(2.9)	
16	250	5.1					3.0	
17	266	4.2					3.8	
18	265	(4.4)					(4.4)	
19	(249)	(4.7)					(3.3)	
20	336	5.6					3.6	
21	(286)	(5.0)					(4.2)	
22		(5.7)					4.2	
23								

Time: 0.0°
Sweep: 0.5 Mc to 11.4 Mc in 5 minutes.

Table 23

Burghead, Scotland (57.7°N, 3.5°W) December 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.4						
01		4.6						
02		4.7						
03		4.9						
04		5.0						
05		5.2						
06		4.8						
07		4.3						
08		5.0						
09		7.3						
10		7.9						
11		8.0						
12		8.1						
13		8.1						
14		8.3						
15		8.1						
16		8.0						
17		7.6						
18		6.6						
19		5.3						
20		4.2						
21		3.8						
22		3.8						
23		3.9						

Time: Local.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 24*

Slough, England (51.5°N, 0.6°W) December 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	3.1					2.6	2.5
01	308	3.2					2.5	2.6
02	308	3.0					2.3	2.6
03	294	3.0						2.6
04	279	2.9						2.7
05	268	2.8					2.4	2.8
06	267	2.6						2.7
07	257	3.3				1.2	2.6	2.7
08	231	6.5			128	1.8	2.6	3.1
09	225	9.2				2.3		3.2
10	227	11.3			121	2.6		3.2
11	230	11.9			119	2.8		3.1
12	229	11.5			119	2.9		3.1
13	231	11.3			119	2.8		3.1
14	233	11.7			120	2.5		3.0
15	226	11.0			130	2.1	2.4	3.1
16	220	9.6			137	1.6	2.6	3.1
17	225	7.7					2.5	3.1
18	227	6.1					2.6	3.1
19	238	4.6					2.6	3.1
20	260	3.7					2.3	2.8
21	300	3.1						2.6
22	317	3.0					2.5	2.5
23	325	3.1						2.5

Time: Local.
Sweep: 0.5 Mc to 16.0 Mc in 4 minutes.
*Average values except f°F2 and fEs, which are median values.

Table 25

Shibata, Japan (38.0°N, 139.5°E) December 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	290	3.2						2.9
01	285	3.2						3.0
02	280	3.3					1.3	2.9
03	270	3.4						2.9
04	260	3.4						3.0
05	250	3.2						3.0
06	240	3.5						3.1
07	220	6.8				1.8		3.5
08	200	9.2			100	2.4		3.7
09	210	10.2	200		100	3.0	2.4	3.6
10	210	11.1	210		100	3.4	3.4	3.5
11	215	11.5	200		100	3.4	3.1	3.5
12	220	11.0	200		100	3.5	3.6	3.4
13	220	11.0	220		100	3.4	3.4	3.4
14	210	10.5	220		100	3.1	3.2	3.4
15	210	9.8	200		100	2.6	2.5	3.5
16	210	9.0			120	2.2	1.9	3.6
17	195	7.4					1.8	3.5
18	205	6.4					1.9	3.4
19	205	5.3					2.0	3.4
20	210	3.9					1.7	3.4
21	230	3.2					1.9	3.2
22	260	3.0					1.7	3.0
23	290	3.0						3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 15.0 Mc.

Table 26

Wuchang, China (30.6°N, 114.4°E) December 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	280	4.1						2.7
01	285	4.2						2.8
02	285	3.7						2.8
03	280	3.5						2.8
04	280	3.2						2.9
05	270	2.9						2.8
06	300	3.0						2.8
07	270	6.0				1.5		2.9
08	240	9.8			120	2.4		3.3
09	240	11.5	240	4.4	120	3.0		3.2
10	240	12.0	230	4.5	120	3.3		3.1
11	240	12.0	230	4.6	120	3.5		3.0
12	240	12.0	230	4.6	120	3.6		3.0
13	250	12.6	220	5.3	120	3.6		2.9
14	250	13.0	230	4.5	120	3.4		2.9
15	240	13.4	210	3.8	120	3.2		3.0
16	240	12.5	210	3.1	120	2.8		3.0
17	240	12.0			120	2.2		3.1
18	220	10.6						3.0
19	220	8.8					2.4	3.0
20	230	8.4					1.8	3.1
21	230	7.3						3.1
22	230	6.0						3.0
23	250	4.6						2.8

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc. Manual operation.

Table 27

Okinawa I. (26.3°N, 127.8°E) December 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00		5.8					2.6	2.6
01		5.8					2.5	2.6
02		5.2					2.4	2.8
03		5.0					2.5	2.8
04		4.8					2.6	2.8
05		3.6					2.4	2.6
06		3.2					2.4	2.6
07		6.0					2.6	2.7
08		10.5					3.2	3.2
09		12.6					4.2	3.2
10		13.3					4.6	3.2
11		13.0					4.7	3.0
12		14.2					4.7	2.8
13		14.5					4.7	2.8
14		15.0					4.6	2.8
15		14.8					4.6	2.9
16		15.2					4.1	2.9
17		14.2				2.6	3.4	2.9
18		13.2					3.0	2.9
19		11.4					2.6	2.9
20		11.4					2.6	2.9
21		10.4					2.4	3.0
22		9.5					2.4	3.0
23		7.7					2.4	2.9

Time: 135.0°E.
Sweep: Manual operation.

Table 28

Tromso, Norway (69.7°N, 18.9°E) November 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	275	(3.8)						
07	266	4.6						
08	259	6.5				1.4		
09	240	7.5				1.7		
10	244	9.0				1.8		
11	246	9.0				2.0		
12	240	8.8				1.8		
13	237	8.5				1.7		
14	236	7.8				1.6		
15	250	6.2					(2.7)	
16	260	5.0					(3.5)	
17	268	5.6					(2.4)	
18	270	5.1					(2.7)	
19	314	5.4					3.2	
20	320	(5.1)					2.2	
21	303	5.0					2.4	
22	340	(5.8)					(2.3)	
23								

Time: 0.0°
Sweep: 0.8 Mc to 11.4 Mc in 5 minutes.

Table 29

Christchurch, N.Z. (43.5°S, 172.6°E) November 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	7.7					2.3	2.6
01	280	7.3					2.0	2.6
02	270	6.8					2.7	2.6
03	270	6.2					2.9	2.6
04	270	6.0					2.7	2.7
05	250	6.1				1.8	3.2	2.8
06	250	7.0	235	4.4		2.6	4.5	2.9
07	280	7.5	230	4.9		3.1	4.8	2.9
08	300	8.5	220	5.3		3.4	5.0	2.9
09	310	9.0	210	5.6		3.6	5.5	2.9
10	320	9.2	205	5.5		3.7	5.4	2.8
11	335	9.2	210	5.8		3.8	5.3	2.8
12	330	9.4	215	6.0		3.7	5.3	2.8
13	340	9.2	220	6.0		3.8	5.3	2.7
14	340	9.0	220	5.8		3.6	5.0	2.8
15	320	9.0	220	5.4		3.6		2.7
16	270	9.1	220	5.3		3.3		2.8
17	250	9.1	240	5.3		3.0		2.8
18	260	9.2				2.4	3.9	2.8
19	250	9.2				1.5	3.2	2.8
20	255	9.0					3.0	2.7
21	260	8.7					3.0	2.7
22	270	8.6					3.1	2.6
23	280	7.9					2.9	2.6

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 30

Peshawar, India (34.0°N, 71.5°E) October 1946

Time	*	f°F2	h'F1	f°F1	h'E	f°E **	fEs	F2-M3000 ***
00								
01								
02								
03								
04								
05								
06								
07	(270)	(9.7)				3.5		
08	300	11.1				3.6		3.2
09	300	11.5				3.6		
10	330	11.9				3.6		
11	360	12.5				3.6		
12	360	12.7				3.6		2.9
13	360	12.9				3.5		
14	360	13.0				3.6		
15	360	12.8				3.6		
16	360	12.5				3.6		2.9
17	330	11.9				3.4		
18	330	11.3				3.1		
19	330	8.8				2.6		
20	330	7.4				2.9		2.9
21	360	6.2				3.2		
22	360	5.8				2.6		
2230	360	5.2				2.9		

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**Both normal and abnormal values of E.
***Average values; other columns, median values.

Table 31

Delhi, India (28.6°N, 77.1°E) October 1946

Time	*	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000 **
00	360	6.5						3.3
01	(375)	(6.0)						
02	330	5.3						
03	345	5.4						
04	330	4.7						3.1
05	330	5.4						
06	330	6.8						
07	330	9.8						
08	345	11.2						3.3
09	360	12.0						
10	360	12.4						
11	360	(12.8)						
12	360	(13.0)						
13	360	(13.0)						
14	345	(13.0)						
15	360	(13.0)						
16	360	(13.0)						2.8
17	360	(12.7)						
18	(360)	(12.0)						
19	(360)	11.4						
20	360	10.6						3.0
21	360	9.4						
22	360	8.3						
23	375	7.4						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**Average values; other columns, median values.

Table 32

Bombay, India (19.0°N, 73.0°E) October 1946

Time	*	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000 **
00								3.0
01								
02		(8.6)						
03								
04								2.9
05								
06								
07	330	10.2						
08	360	11.8						2.9
09	390	13.3						
10	390	14.3						
11	(420)	(14.7)						
12		(14.8)						
13		(14.7)						
14		(14.9)						
15		(15.0)						
16		(15.2)						
17		(15.2)						
18		(15.1)						
19		(14.8)						
20		(14.9)						
21		(14.6)						
22	(390)	(14.3)						
23		(12.7)						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**Average values; other columns, median values.

Table 33

Madras, India (13.0°N, 80.2°E) October 1946

Time	*	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000 **
00								3.3
01								
02								
03								
04								3.5
05								
06								
07	345	(9.3)						
08	360	10.5						3.2
09	420	11.1						
10	420	11.8						
11	420	11.6						
12	480	11.8						
13	480	12.2						
14	510	12.8						
15	480	(13.0)						
16	480	(13.0)						
17	(420)	(13.0)						
18	(420)	(13.0)						
19	480	12.4						
20	(480)	(12.0)						
21	(360)	(10.8)						
22	(390)	(11.2)						
23		(11.2)						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**Average values; other columns, median values.

Table 34

Christchurch, N.Z. (43.5°S, 172.6°E) October 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	280	6.8						2.6
01	270	6.3						2.7
02	265	5.6						2.7
03	260	5.0					1.8	2.6
04	280	4.9					2.6	2.7
05	280	4.8				1.4	3.0	2.8
06	250	5.8				2.0	2.9	3.0
07	240	7.0	240	4.3		2.8		3.0
08	270	7.8	220	4.8		3.1	4.8	3.0
09	290	8.3	220	5.0		3.4	4.2	2.9
10	300	8.9	210	5.3		3.5	4.3	2.9
11	300	9.2	210	5.3		3.6		2.9
12	305	9.2	210	5.3		3.6		2.9
13	300	9.3	210	5.1		3.6		2.8
14	290	9.3	220	5.0		3.5		2.8
15	270	9.0	220	4.7		3.3		2.8
16	250	8.5	230	4.2		3.0		2.9
17	240	9.0				2.6		2.9
18	250	8.6				1.8	1.9	2.9
19	250	8.9					2.4	2.8
20	250	8.5						2.7
21	260	7.9					2.4	2.7
22	270	7.4					1.8	2.6
23	280	7.2						2.6

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 35 (Supersedes Table 17, CRPL-F28)

Kermadec Is. (29.3°S, 177.9°W) September 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	5.5						2.8
07	278	8.2			150	2.4		3.1
08	300	9.0	275	4.3	130	3.0		3.1
09	305	9.8	272	4.8	130	3.3		3.0
10	300	10.2	270	5.0	125	3.5		2.9
11	322	10.4	250	4.9	125	3.6		2.8
12	320	10.3	270	4.9	130	3.5		2.8
13	320	10.0	270	4.8	125	3.6		2.8
14	312	9.4	265	4.7	125	3.6		2.8
15	300	9.4	265	4.6	130	3.3		2.8
16	300	9.0	275	4.2	130	2.8		2.8
17	285	8.6			125	2.2		2.8
18	278	8.6						2.7
19	300	7.6						2.6
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 36 (Supersedes Table 20, CRPL-F27)

Kermadec Is. (29.3°S, 177.9°W) August 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	320	4.2						2.7
07	275	7.2				2.0		3.1
08	275	8.8	260	3.9	135	2.8		3.2
09	285	9.3	265	4.5	130	3.2		3.1
10	300	9.4	260	4.8	125	3.4		3.1
11	310	9.6	268	4.8	130	3.5		3.0
12	300	9.1	250	4.8	125	3.5		3.0
13	310	8.8	255	4.8	130	3.5		3.0
14	310	8.6	255	4.6	125	3.4		3.0
15	300	8.3	268	4.6	130	3.2		2.9
16	300	8.0	275	4.3	130	2.8		2.9
17	285	8.2			125	2.2		2.9
18	270	7.4					2.8	2.9
19	275	6.2					2.5	2.7
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 37 (Supersedes Table 27, CRPL-F28.

Corresponding changes should be made in figure 51 of that issue.)

Rarotonga I. (21.3°S, 159.8°W) July 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		5.5						2.8
01		4.7						3.0
02		4.3						3.0
03		4.0						2.9
04		3.4						2.8
05		3.2						2.8
06		3.4						2.7
07		6.6						3.1
08	250	9.4	245	4.3		3.2		3.1
09		10.5						3.3
10	288	11.6	240	5.0		3.8		3.3
11		10.0						3.2
12	290	9.6	240	5.2		4.0		3.1
13		9.5						2.8
14	300	10.0	250	5.2		4.2		2.9
15		10.1						2.9
16	280	9.6	250	4.5		3.4		3.0
17		10.0						3.1
18	250	9.5						3.1
19		7.8						3.0
20		7.2						2.8
21		7.2						2.8
22		7.0						2.8
23		6.2						2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc. Manual operation.

Teble 38 (Supersedes Table 28, CRPL-F28)

Kermadec Is. (29.3°S, 177.9°W) July 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	3.6						2.8
07	270	6.0						3.1
08	275	8.0			135	2.4		3.2
09	275	8.8	270	4.3	130	2.9		3.1
10	290	9.2	270	4.4	130	3.2		3.1
11	290	8.8	260	4.6	125	3.2		3.1
12	285	8.2	250	4.6	130	3.3		3.1
13	320	8.4	250	4.6	125	3.2	4.4	2.9
14	312	8.6	270	4.6	125	3.2	4.5	2.9
15	300	8.4	275	4.3	130	3.0	3.9	2.9
16	288	7.7	275	4.6	128	2.5	3.6	3.0
17	275	7.6					3.4	3.0
18	265	6.4					3.2	2.9
19	270	5.2					3.3	2.7
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 39 (Supersedee Teble 34, CRPL-F28.

Corresponding changes should be made in figure 65 of that issue.)

Rarotonga I. (21.3°S, 159.8°W) June 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		3.6						2.7
01		3.9						2.7
02		3.9						2.8
03		4.0						3.1
04		3.5						2.9
05		3.4						2.8
06		3.5						2.9
07		6.5						3.1
08	250	9.2	250	4.4		3.0		3.2
09		10.6						3.2
10	272	10.6	250	5.0		4.0		3.3
11		10.0						3.2
12	298	9.6	250	5.3		4.3		3.0
13		9.5						2.9
14	290	9.8	245	5.2		4.2		3.0
15		10.0						3.0
16	260	10.0	245	5.0		3.6		3.0
17		10.0						3.2
18	240	8.9						3.2
19		7.4						3.2
20		6.0						2.9
21		5.6						2.9
22		4.9						2.8
23		4.4						2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc. Manual operation.

Teble 40

Kermadec Is. (29.2°S, 177.9°W) June 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	3.9						2.8
07	270	6.1						3.1
08	270	7.5			132	2.3		3.2
09	278	8.6	270	4.2	130	2.8		3.2
10	288	8.8	270	4.4	130	3.1		3.2
11	290	8.4	265	4.6	130	3.2	3.4	3.1
12	292	8.4	260	4.4	130	3.2	4.1	3.0
13	300	8.4	270	4.5	130	3.2	3.5	3.0
14	300	8.2	270	4.4	125	3.0		3.0
15	288	7.8	270	4.2	132	2.8	3.2	3.0
16	275	7.7			125	2.4	3.7	3.0
17	275	7.2					3.4	3.0
18	265	5.6					3.1	3.0
19	280	4.6					2.6	2.8
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 41

Kermadec Is. (29.2°S, 177.9°W) May 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	4.6						2.8
07	275	7.2				2.2		3.1
08	270	8.8	265	4.0	140	2.5		3.2
09	275	9.4	265	4.4	130	2.9		3.1
10	290	9.4	265	4.5	130	3.2		3.2
11	292	9.0	250	4.7	125	3.2		3.1
12	300	8.6	270	4.7	125	3.3	3.9	3.0
13	305	8.8	260	4.6	125	3.3		3.0
14	300	9.2	268	4.6	130	3.2		3.0
15	280	9.0	275	4.2	130	2.9		2.9
16	285	8.4	275	4.0	130	2.5		3.0
17	275	8.0				2.1	2.6	3.0
18	265	7.2					2.5	2.8
19	275	6.0						2.8
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 42 (Supersedes Table 18, IRPL-F22)

Kermadec Is. (29.2°S, 177.9°W) April 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	292	5.6						2.9
07	270	8.3				2.2		3.2
08	275	10.5	270	4.0	140	2.8		3.1
09	280	10.6	265	4.4	130	3.1		3.1
10	292	11.4	265	4.8	125	3.5		3.0
11	292	11.4	262	4.9	125	3.6		3.0
12	295	10.8	250	4.9	125	3.6		2.9
13	320	11.5	260	5.0	130	3.6		2.8
14	305	11.8	275	5.0	125	3.5		2.9
15	295	11.1	272	4.6	125	3.2		2.9
16	280	10.8	280	4.2	128	2.8		2.8
17	275	9.8				2.2	3.3	3.0
18	270	8.6					3.0	2.9
19	(275)	7.4					2.9	2.7
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 43 (Supersedes Table 22, IRPL-F22)

Kermadec Is. (29.2°S, 177.9°W) March 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	318	7.3					2.3	2.6
01								
02								
03	310	6.4						2.5
04								
05	(300)	5.8						2.6
06	292	6.6						2.8
07	275	9.0			140	2.4	3.2	3.0
08	275	10.4	255	4.2	130	3.0	3.8	3.0
09	282	10.4	250	4.7	122	3.4		3.0
10	300	10.8	250	5.0	120	3.5		2.9
11	312	11.2	240	5.1	120	3.7		2.9
12	320		245	5.3	120	3.7		2.8
13	320	11.4	252	5.2	120	3.7		2.8
14	325	11.3	265	5.0	120	3.6		2.7
15	320	10.8	270	4.9	120	3.4		2.8
16	305	10.4	275	4.5	120	3.1		2.7
17	290	10.2	275	3.8	135	2.6	3.5	2.8
18	275	9.4					3.6	2.8
19	270	8.4					3.2	2.6
20	(300)	8.2					2.7	2.6
21	322	8.0						2.5
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 44 (Supersedes Table 19, IRPL-F21)

Kermadec Is. (29.2°S, 177.9°W) February 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	7.7					3.3	2.7
01								
02								
03	320	6.0						2.6
04								
05	310	5.4					2.3	2.7
06	285	6.0				2.1	2.4	3.0
07	295	7.2	275	3.8	125	2.6	3.4	2.9
08	315	8.0	260	4.5	125	3.0	4.2	3.0
09	305	8.8	258	4.7	125	3.3	4.6	2.9
10	332	8.8	250	4.9	120	3.5	5.1	2.8
11	345	9.3	240	5.1	120	3.6	5.2	2.8
12	340	10.0	250	5.1	120	3.7	4.6	2.8
13	348	9.8	250	5.1	120	3.8	4.8	2.8
14	345	9.3	268	5.1	120	3.7		2.7
15	340	9.4	275	4.9	120	3.6	4.6	2.8
16	325	8.8	265	4.5	120	3.3	4.7	2.8
17	315	8.6	275	4.2	122	2.8	4.6	2.8
18	292	8.2	280	3.4	122	2.2	3.8	2.8
19	290	8.4					4.6	2.7
20	280	8.2					4.2	2.6
21	310	8.2					3.6	2.6
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 45 (Supersedes Table 25, IRPL-F20)

Kermadec Is. (29.2°S, 177.9°W) January 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	278	7.4					3.9	2.8
01								
02								
03	290	5.5					2.6	2.7
04								
05	275	4.6					2.9	2.9
06	270	5.6	255	3.4	120	2.1	2.9	3.1
07	280	6.6	250	4.0	120	2.6	3.5	3.1
08	300	7.1	235	4.4	120	3.0	4.2	3.0
09	328	7.2	225	4.6	115	3.4	3.8	2.9
10	325	7.9	225	4.8	118	3.5	4.3	3.0
11	328	8.1	220	4.8	115	3.6	4.5	2.8
12	350	7.7	225	4.9	115	3.6	4.1	2.8
13	350	7.8	220	4.8	118	3.6	4.8	2.8
14	340	8.4	225	4.7	115	3.5	4.6	2.9
15	320	8.2	250	4.6	115	3.4	5.1	2.9
16	322	7.8	250	4.4	120	3.2	5.3	3.0
17	305	7.7	250	4.0	120	2.8	5.4	3.0
18	295	7.4	265	3.4	120	2.1	4.6	2.9
19	275	7.4					4.2	2.8
20	280	7.4					3.9	2.7
21	300	7.2					3.3	2.6
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 46 (Supersedes Table 16, IRPL-F18)

Kermadec Is. (29.2°S, 177.9°W) December 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	292	6.7	260	3.6	120	2.2	2.8	3.0
07	300	7.4	250	4.2	120	2.7	4.5	2.9
08	310	8.0	250	4.7	120	3.1	5.3	2.9
09	328	8.6	242	4.8	120	3.3	5.2	2.8
10	325	9.0	240	4.8	120	3.4	5.9	2.8
11	345	9.3	225	4.9	120	3.5	5.5	2.8
12	335	9.5	225	5.0	120	3.6	5.0	2.8
13	340	9.2	235	4.8	120	3.6	4.6	2.8
14	340	8.8	250	4.8	120	3.5	4.0	2.8
15	330	8.7	250	4.7	120	3.4	4.4	2.8
16	325	8.6	250	4.5	120	3.2	5.0	2.8
17	305	8.8	260	4.1	120	2.6	5.6	2.9
18	290	8.6			120	2.0	5.1	2.8
19	270	8.5					4.9	2.8
20	(300)	8.0					5.1	2.7
21	315	8.3					4.8	2.7
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 47*

Pitcairn I. (25.0°S, 130.0°W) November 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	230	6.1					2.7	3.2
0330								
0430								
0530	250	6.1					2.6	3.0
0630								
0730	250	8.2	220	4.3	100	2.7	4.4	3.2
0830								
0930	285	11.0	208	4.8	100	3.4	4.9	(3.0)
1030								
1130	300	11.5	210	5.0	100	3.6	4.4	(3.0)
1230								
1330	280	11.2	215	4.8	100	3.5	4.8	(3.1)
1430								
1530	280	10.2	220	4.8	100	3.2	5.0	3.1
1630								
1730								
1830								
1930	250	7.6					2.7	2.9
2030								
2130								
2230	300	8.2					3.2	2.8
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.
*Apparatus permanently closed down after November 16, 1945.

Table 48

(Supersedes Table 45, IRPL-F18 and Table 18, IRPL-F16)

Pitcairn I. (25.0°S, 130.0°W) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	200	5.6					2.0	3.3
0330								
0430								
0530	280	4.0						2.9
0630								
0730	238	9.2	230	4.4	100	2.7	4.2	3.3
0830								
0930	270	10.8	210	4.8	100	3.3	4.4	3.2
1030								
1130	280	11.0	205	5.0	100	3.5	4.3	3.2
1230								
1330	290	11.2	210	5.0	100	3.5	4.3	3.1
1430								
1530	270	10.9	220	4.6	100	3.2	4.4	3.2
1630								
1730								
1830								
1930	250	7.6					2.6	2.9
2030								
2130								
2230	290	7.6					1.8	3.0
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 130 Mc. Manual operation.

Table 49

(Supersedes Table 51, IRPL-F15 and Table 18, IRPL-F15)

Pitcairn I. (25.0°S, 130.0°W) September 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	228	4.4						3.3
0330								
0430								
0530	290	2.4						2.9
0630								
0730	230	6.8	230	4.3	110	2.3	3.4	3.4
0830								
0930	262	8.8	220	4.5	100	3.1	4.4	3.4
1030								
1130	270	9.5	200	4.6	100	3.3	4.8	3.4
1230								
1330	260	8.0	200	4.5	100	3.3	4.4	3.4
1430								
1530	260	7.0	202	4.2	100	3.0	4.4	3.4
1630								
1730								
1830								
1930	250	5.5						3.0
2030								
2130								
2230	300	5.0						2.9
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 50 (Supersedes Table 22, IRPL-F14)

Pitcairn I. (25.0°S, 130.0°W) August 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	258	3.4					2.5	3.1
0330								
0430								
0530	288	2.3						3.0
0630								
0730	235	5.9	200		115	2.0	3.0	3.4
0830								
0930	260	7.5	220	4.4	100	2.9	4.2	3.5
1030								
1130	260	7.2	200	4.5	100	3.2	4.8	3.6
1230								
1330	250	7.4	190	4.4	100	3.2	4.5	3.5
1430								
1530	250	6.5	200	4.0	100	2.9	4.0	3.6
1630								
1730								
1830								
1930	230	4.1						3.2
2030								
2130								
2230	275	3.6						3.0
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 51 (Supersedes Table 14, IRPL-F13)

Pitcairn I. (25.0°S, 130.0°W) July 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	270	3.3					2.3	3.0
0330								
0430								
0530	290	2.6					2.7	3.0
0630								
0730	230	5.7			130	1.8	2.9	3.5
0830								
0930	250	8.0	220	4.2	100	2.9	4.2	3.6
1030								
1130	250	6.4	200	4.5	100	3.2	4.5	3.6
1230								
1330	260	6.8	195	4.4	100	3.1	4.9	3.4
1430								
1530	250	6.6	210	3.9	100	2.8	4.2	3.5
1630								
1730								
1830								
1930	240	4.3					2.4	3.1
2030								
2130								
2230	270	3.2						3.1
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 52 (Supersedes Table 21, IRPL-F12)

Pitcairn I. (25.0°S, 130.0°W) June 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	270	3.4						3.1
0330								
0430								
0530	280	2.6					2.2	3.0
0630								
0730	230	6.1			140	2.0	2.9	3.4
0830								
0930	250	8.2	210	4.2	100	2.9	4.6	3.5
1030								
1130	250	7.1	200	4.4	100	3.1	4.7	3.6
1230								
1330	250	7.1	200	4.4	100	3.2	5.0	3.5
1430								
1530	240	7.5	200	4.0	100	2.7	4.3	3.4
1630								
1730								
1830								
1930	230	4.2					2.3	3.1
2030								
2130								
2230	270	3.4						3.0
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 53

Trinidad, Brit. West Indies (10.6°N, 61.2°W) May 1945

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	260	6.4						2.9
01	260	6.1						3.0
02	250	5.2						3.1
03	240	4.7						3.2
04	240	3.8						3.1
05	260	3.0						3.1
06	245	4.2						3.2
07	250	5.4				2.4	2.3	3.2
08	300	6.4	250	4.4	115	2.8	3.0	3.0
09	340	7.2	230	4.5	110		3.0	2.9
10	370	8.6	250	4.7	120		3.9	2.7
11	370	9.8	250	4.6	120		4.1	2.7
12	350	10.4	260	4.6	120	3.5	4.4	2.8
13	325	11.2	250	4.7	120	3.5	4.3	2.9
14	320	11.6	250	4.6	120	3.4	4.1	2.9
15	300	11.4	250	4.4	110	3.2	4.2	3.0
16	290	10.4	240	4.2	110	2.9	3.8	3.0
17	250	10.2					3.7	3.0
18	245	10.0					3.0	3.1
19	235	8.4					2.6	2.9
20	270	7.3					2.5	2.8
21	270	6.8						2.8
22	270	6.4						2.8
23	270	6.2						2.9

Time: 60.0°W.
Sweep: Manual operation.

Table 54 (Supersedes Table 35, IRPL-F11)

Pitcairn I. (25.0°S, 130.0°W) May 1945

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
0030								
0130								
0230	270	3.3						3.0
0330								
0430								
0530	285	2.4					2.1	3.0
0630								
0730	230	6.8	230		120	1.9	2.9	3.4
0830								
0930	250	8.8	210	4.2	100	2.8	4.2	3.5
1030								
1130	250	8.0	210	4.4	100	3.2	4.7	3.5
1230								
1330	250	7.4	200	4.3	100	3.1	4.4	3.5
1430								
1530	245	7.4	200	3.8	100	2.6	4.2	3.5
1630								
1730								
1830								
1930	240	4.3					2.3	3.0
2030								
2130								
2230	270	3.5						3.0
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 55 (Supersedes Table 32, IRPL-F10)

Pitcairn I. (25.0°S, 130.0°W) April 1945

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
0030								
0130								
0230	245	4.4					2.9	3.3
0330								
0430								
0530	300	2.7					2.8	2.8
0630								
0730	235	7.4			110	2.2	3.1	3.3
0830								
0930	250	10.2	218	4.4	100	3.0	4.3	3.5
1030								
1130	250	10.0	210	4.6	100	3.3	4.6	3.4
1230								
1330	265	9.7	200	4.5	100	3.2	4.4	3.3
1430								
1530	245	9.5	225	4.2	100	2.9	4.2	3.5
1630								
1730								
1830								
1930	240	5.2					2.9	2.8
2030								
2130								
2230	258	4.8					3.4	3.0
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 56 (Supersedes Table 12, IRPL-F9)

Pitcairn I. (25.0°S, 130.0°W) March 1945

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
0030								
0130								
0230	232	4.8					2.3	3.3
0330								
0430								
0530	290	3.2					2.3	2.9
0630								
0730	230	7.4			110	2.3	3.6	3.4
0830								
0930	255	9.5	200	4.5	100	3.0	4.3	3.3
1030								
1130	265	10.6	200	4.6	100	3.3	4.3	3.3
1230								
1330	255	9.6	200	4.5	100	3.3	4.6	3.3
1430								
1530	260	8.7	220	4.4	100	3.1	4.3	3.3
1630								
1730								
1830								
1930	240	6.0					2.6	3.0
2030								
2130								
2230	295	5.3					2.7	2.9
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 57 (Supersedes Table 32, IRPL-F8)

Pitcairn I. (25.0°S, 130.0°W) February 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	230	5.7					2.9	3.4
0330								
0430								
0530	270	3.8					2.0	2.9
0630								
0730	240	7.0			108	2.5	4.3	3.4
0830								
0930	280	8.0	200	4.5	100	3.1	4.8	3.0
1030								
1130	310	10.9	195	4.6	100	3.3	5.0	3.0
1230								
1330	280	11.1	195	4.6	100	3.4	4.9	3.4
1430								
1530	270	10.0	220	4.5	100	3.2	4.9	3.3
1630								
1730								
1830								
1930	245	6.7					3.8	3.0
2030								
2130								
2230	300	6.6					3.1	2.8
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 58 (Supersedes Table 27, IRPL-F7)

Pitcairn I. (25.0°S, 130.0°W) January 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	250	4.8					2.9	2.9
0330								
0430								
0530	250	4.1					2.9	3.1
0630								
0730	250	6.6	245	4.2	105	2.5	5.4	3.2
0830								
0930	340	8.8	222	4.5	100	3.0	6.4	2.8
1030								
1130	345	10.0	200	4.6	100	3.3	6.1	2.9
1230								
1330	322	>11.0	228	4.6	100	3.5	5.8	3.0
1430								
1530	255	>10.3	220	4.4	100	3.2	5.6	3.3
1630								
1730								
1830								
1930	270	5.8					5.6	2.9
2030								
2130								
2230	3.5	5.9					4.2	2.8
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 59 (Supersedes Table 14, IRPL-F6)

Pitcairn I. (25.0°S, 130.0°W) December 1944

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	250	5.6					3.1	3.0
0330								
0430								
0530	270	5.0					3.8	2.9
0630								
0730	250	6.6	235	4.2	110	2.8	5.2	3.0
0830								
0930	320	8.7	230	4.6	100	3.2	5.2	2.9
1030								
1130	325	10.6	210	4.7	100	3.3	5.3	3.0
1230								
1330	290	10.4	215	4.7	100	3.4	5.2	3.2
1430								
1530	280	10.0	232	4.4	100	3.1	4.9	3.3
1630								
1730								
1830								
1930	250	6.0					4.9	2.8
2030								
2130								
2230	320	6.7					4.7	2.7
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 60 (Supersedes Table 26, IRPL-F5)

Pitcairn I. (25.0°S, 130.0°W) November 1944

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
0030								
0130								
0230	235	4.7					2.7	3.2
0330								
0430								
0530	250	4.2					2.6	3.1
0630								
0730	260	8.0	222	4.0	100	2.7	4.9	3.3
0830								
0930	298	9.0	200	4.6	100	3.0	5.2	3.0
1030								
1130	300	10.1	200	4.7	100	3.2	5.5	3.0
1230								
1330	290	10.2	230	4.5	100	3.2	5.0	3.3
1430								
1530	270	9.0	235	4.3	100	3.0	5.7	3.4
1630								
1730								
1830								
1930	268	6.4					5.7	2.9
2030								
2130								
2230	310	6.1					3.9	2.8
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 61 (Supersedes Table 32, IRPL-F5)

Pitcairn I. (250.0°S, 130.0°W) October 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
0030								
0130								
0230	210	4.7						3.4
0330								
0430								
0530	280	3.4						2.9
0630								
0730	250	8.0	222	3.8	100		4.2	3.4
0830								
0930	285	9.2	205	4.6	100	3.1	4.8	3.2
1030								
1130	270	10.0	190	4.6	100	3.1	4.5	3.4
1230								
1330	280	9.5	200	4.6	100	3.2	4.5	3.3
1430								
1530	260	8.2	230	4.2	100	3.1	4.4	3.4
1630								
1730								
1830								
1930	250	5.9					3.2	3.0
2030								
2130								
2230	300	6.2					2.5	2.9
2330								

Time: 127.5°W.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 62*

Delhi, India (28.6°N, 77.1°E) May 1943

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00		4.8						
01		4.4						
02		4.4						
03		4.2						
04		4.1						
05		4.2						
06		5.6						
07		6.2						
08		6.8						
09		7.1						
10		7.9						
11		8.8						
12		9.6						
13		10.1						
14		10.4						
15		10.6						
16		10.1						
17		9.3						
18		8.9						
19		8.0						
20		6.7						
21		5.8						
22		5.2						
23		5.0						

Time: 75.0°E.
Sweep: Manual operation
*Average Values.

Table 63*

Delhi, India (28.6°N, 77.1°E) April 1943

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00		4.4						
01		4.1						
02		3.9						
03		3.8						
04		3.4						
05		3.7						
06		5.6						
07		6.7						
08		7.1						
09		7.7						
10		8.3						
11		9.1						
12		10.6						
13		11.1						
14		11.4						
15		11.6						
16		11.2						
17		10.7						
18		10.3						
19		9.0						
20		7.0						
21		5.2						
22		4.7						
23		4.4						

Time: 75.0°E.
Sweep: Manual operation.
*Average values.

Table 64*

Delhi, India (28.6°N, 77.1°E) March 1943

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00		3.5						
01		3.2						
02		3.6						
03		3.0						
04		2.8						
05		2.9						
06		3.8						
07		5.9						
08		7.0						
09		8.0						
10		8.8						
11		9.7						
12		9.8						
13		10.4						
14		10.2						
15		9.6						
16		9.2						
17		8.6						
18		8.0						
19		6.3						
20		4.8						
21		4.1						
22		3.7						
23		3.4						

Time: 75.0°E.
Sweep: Manual operation.
*Average values.

Table 65*

Delhi, India (28.6°N, 77.1°E) February 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		2.9						
01		2.9						
02		2.9						
03		2.9						
04		2.7						
05		2.6						
06		2.8						
07		4.9						
08		6.2						
09		6.8						
10		7.4						
11		7.9						
12		8.1						
13		8.0						
14		8.1						
15		7.3						
16		7.2						
17		6.6						
18		5.9						
19		4.8						
20		4.3						
21		3.5						
22		3.2						
23		3.0						

Time: 75.0°E.
Sweep: Manual operation.
*Average values.

Table 66*

Delhi, India (28.6°N, 77.1°E) January 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		2.7						
01		2.8						
02		2.9						
03		2.6						
04		2.6						
05		2.1						
06		2.3						
07		4.4						
08		5.3						
09		6.0						
10		6.5						
11		7.1						
12		7.6						
13		7.5						
14		7.0						
15		6.8						
16		6.6						
17		5.8						
18		4.3						
19		3.8						
20		3.4						
21		3.0						
22		2.8						
23		2.7						

Time: 75.0°E.
Sweep: Manual operation.
*Average values.

TABLE 67

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), km (Unit), March (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5° W

75° W Mean Time

Notional Bureou Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	(320)	310	300	280	290	300	260	220	230	250	250	250					
2							C K	C K	340 K	320 K	C K	(390) K	450 K	310 K	[310] C K	(330) K	270 K	260 K	250 K					
3							C K	C K	C K	C K	C K	G K	(500) K	(450) K	370 K	(450) K	(570) K	(580) K	(400) K					
4							(390)	290	290	280	270	270	(280)	230	230	230	300	270	280					
5							(340)	270	260	260	260	230	240	240	250	270	250	250	260					
6							280	250	240	240	[250] C	270	260	260	250	260	250	250	250					
7							E	270	250	250	250	260	320	250	(260)	260	250	260	250					
8							C K	C K	C K	C K	C K	C K	C K	(270) K	[240] B K	(230) K	(290) K	330 K	300 K					
9							C	270	260	260	250	(250)	[250] C	(270)	(350)	(330)	(230)	(240)	250					
10							C	C	250	250	(250)	(260)	(280)	(280)	250	250	(310)	260	250					
11							300	250	250	250	(270)	260	(230)	(240)	(240)	(250)	(240)	(260)	(250)					
12							300	280	270	(240)	(260)	(290)	(230)	310	(250)	(300)	C	C	C					
13							E	270	260	(260)	[250] C	(240)	(250)	(250)	(250)	260	260	(260)	(260)					
14							E	300	(290)	260	(300)	(290)	(320)	(310)	(260)	[260] C	(260)	[270] C	270					
15							C K	C K	C K	C K	C K	C K	760 K	[>600] C K	(520) K	(450) K	(360) K	[330] C K	320 K					
16							300	270	260	270	(300)	(300)	[300] C	(310)	(240)	240	240	250	240					
17							250	(260)	(260)	260	(250)	(280)	(260)	[250] C	(250)	250	260	260	260					
18							350	280	260	250	280	250	(320)	(280)	(280)	(280)	(280)	280	280					
19							350	270	250	(250)	(250)	[290] C	(320)	(250)	(300)	(270)	270	270	270					
20							(320)	270	270	250	250	(250)	(300)	[300] C	(310)	(310)	(250)	260	270					
21							(320)	260	260	250	250	(250)	(250)	(250)	260	260	(260)	260	250					
22							C	300	(300)	280	(310)	C	C	C	C	280	280	280	C					
23							(400)	310	280	(280)	(320)	(320)	[340] C	(350)	(310)	270	(280)	290	280					
24							320	260	270	260	250	250	240	[250] C	(270)	240	250	260	260					
25							(350)	300	270	260	C	C	C	C	(330)	260	(260)	(270)	260					
26							370	270	260	250	(270)	(320)	(320)	[310] C	[290] F	(270)	(260)	(300)	270					
27							(380)	300	260	250	(280)	(260)	(310)	(280)	(260)	(280)	270	260	250					
28							C K	(350) K	(310) K	(560) K	G K	C K	(630) K	(570) K	(500) H K	[460] C K	420 K	280 K	(280) K					
29							E K	(290) K	350 K	390 K	410 K	460 K	(460) K	[440] C K	420 K	430 K	410 K	280 K	280 K					
30							E K	280 K	260 K	(360) K	[390] C K	410 K	(360) K	420 K	250 K	370 K	(320) K	280 K	(270) K					
31							(320)	280	280	280	320	390	260	260	260	250	260	270	270					
Median							320	275	260	260	(270)	(275)	(300)	(280)	(260)	270	260	265	260					
Count							22	26	28	28	26	26	28	29	30	31	30	30	29					

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 702310

TABLE 68

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), March (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	7.8	10.3	11.6	12.1	12.8	12.7	12.9	12.8	12.9	13.0	12.6	12.0					
2							C K	C K	(6.7)J K	7.2 K	[7.5]C K	7.6 K	9.0 K	9.5 K	10.2 K	10.5 K	11.4 K	(12.4) K	11.4 K					
3							C K	C K	C K	C K	C K	<4.7Q K	(6.0)F K	(6.8)F K	7.6 K	8.4 K	(6.3) K	F K	F K					
4							(4.6)F	(7.2)F	11.0	12.6	12.7	12.5	13.0	13.4	13.0	13.0	12.7	12.3	11.3					
5							(5.0)F	(7.3)F	9.9	11.8	12.2	12.8	13.4	13.2	13.1	12.3	12.2	12.0	11.5					
6							(5.8)	8.5	10.7	12.0	[12.7]C	13.1	12.9	13.2	12.9	13.0	12.8	12.6	12.0					
7							(6.5)	8.2	10.2	11.7	13.0	(12.7)J	13.8	13.5	13.1	13.0	12.8	12.4	12.3					
8							C K	C K	C K	C K	C K	C K	(8.1)J K	8.6 K	9.3 K	9.9 K	8.5 K	8.3 K	(8.7)J K					
9							C	(7.9)J	(9.6)	10.3	11.2	11.8	12.3	12.0	11.8	11.5	11.8	11.6	11.3					
10							C	C	11.4	12.7	12.8	13.8	14.2	13.9	13.6	12.7	(12.9)	12.7	12.5					
11							7.2	9.1	11.2	12.6	12.9	13.5	13.5	13.8	13.4	13.4	13.2	12.7	12.5					
12							6.4	7.9	10.0	11.2	12.7	13.7	13.7	13.4	13.0	12.5	C	C	C					
13							5.8	8.1	9.7	11.0	[11.9]C	12.9	13.6	13.0	12.5	[12.5]C	12.5	12.2	11.5					
14							5.8	7.5	8.9	9.4	11.4	12.3	12.6	12.4	12.2	11.8	11.4	11.5	11.2					
15							C K	C K	C K	C K	C K	C K	5.9 K	(6.8) K	(6.6)F K	6.7 K	6.5 K	(6.5) K	(6.7)F K					
16							C	8.0	(9.1)	(9.7)J	9.9	11.3	11.8	12.3	12.4	13.0	13.1	13.1	12.8					
17							6.0	7.0	8.7	10.5	11.2	12.3	12.5	(13.0)	12.7	12.4	12.2	12.2	11.7					
18							(5.5)F	7.8	9.9	11.2	12.3	12.7	12.9	(12.5)	12.7	12.6	12.2	12.5	12.2					
19							(5.8)	8.4	10.3	11.4	11.5	12.6	12.8	12.5	12.5	12.2	12.0	12.0	12.0					
20							(7.0)F	8.7	(10.5)	11.7	12.2	12.8	12.8	13.0	12.9	12.7	12.7	12.5	12.5					
21							C	7.7	10.4	11.7	12.7	[12.3]C	11.9	(13.5)	(13.0)	13.0	12.9	12.8	(11.8)					
22							C	(7.0)	(9.0)	9.5	10.3	10.7	10.7	10.8	10.7	11.0	11.5	10.8	C					
23							F	C	8.5	9.6	(10.0)F	11.3	11.5	11.5	12.1	11.7	10.6	10.9	10.3					
24							F	8.5	11.2	12.0	13.5	13.7	13.4	13.0	12.8	12.5	12.5	12.3	11.5					
25							(5.5)F	7.0	7.7	8.2	C	C	10.9	11.5	12.0	12.0	11.8	11.5	11.0					
26							F	(7.0)F	8.0	9.8	10.7	(11.3)F	(11.8)F	11.5	11.4	11.1	(11.5)	10.9	10.9					
27							F	(7.0)F	(8.2)	10.1	11.0	11.9	12.1	12.5	(12.4)	12.2	12.2	12.0	11.8					
28							r K	(5.4)F K	(5.0)F K	(5.0)F K	<4.5Q K	[5.3]C K	(5.9) K	(6.5) K	7.3F K	8.0 K	8.2 K	8.0 K	7.6 K					
29							(4.6)F K	(6.1)F K	6.5 K	6.8 K	7.3 K	(7.8) K	8.6 K	(8.4) K	9.2 K	9.6 K	9.9 K	10.2 K	10.2 K					
30							(5.5)F K	(6.8) K	7.9 K	8.0 K	8.1 K	8.1 K	9.0 K	9.5 K	9.7 K	11.2 K	11.6 K	11.1 K	11.2 K					
31							(5.7)F	8.2	9.4	10.3	11.8	12.4	12.8	12.5	12.2	12.1	11.7	11.5	11.5					
Median							(5.8)	7.8	9.6	10.8	11.8	12.4	12.5	12.5	12.4	12.2	12.1	12.0	11.5					
Count							16	25	28	28	27	28	31	31	31	31	30	29	28					

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 703319

TABLE 69

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), March (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1							C	[9.2]C	[11.0]C	[11.9]C	[12.5]C	[12.8]C	[13.1]	[12.9]C	[12.8]C	[13.0]C	[12.9]C	[12.9]C						
2							CK	CK	[7.0]C	[7.4]CK	[7.5]CK	[8.3]CK	[9.4]CK	[9.8]CK	[10.5]K	[10.7]K	[12.0]CK	[12.3]CK						
3							CK	CK	CK	CK	CK	[5.3]CK	[6.3]K	[7.0]CK	[8.0]CK	[7.3]K	CK	CK						
4							[6.0]C	[9.1]C	[12.3]C	[12.7]C	[12.6]C	[12.6]C	[13.3]C	[13.3]C	[13.0]C	[12.9]C	[12.5]C	[12.0]C						
5							[6.0]C	[8.5]C	[10.9]C	[12.1]C	[12.4]C	[13.2]C	[13.4]C	[13.1]C	[12.7]C	[12.3]C	[12.1]C	[11.8]C						
6							[7.4]C	[9.7]C	[11.4]C	[12.4]C	[12.9]C	[13.0]C	[13.0]C	[13.0]C	[12.9]C	[12.9]C	[12.7]C	[12.3]C						
7							[7.6]C	[9.2]C	[10.9]C	[12.4]C	[13.0]C	[13.4]C	[13.7]C	[13.3]C	[13.1]C	[12.9]C	[12.6]C	[12.3]C						
8							CK	CK	CK	CK	CK	CK	[8.4]CK	[8.9]CK	[9.1]CK	[8.7]K	[8.6]CK	[8.8]K						
9							C	[9.0]C	[10.0]C	[10.7]C	[11.6]C	[12.1]C	[12.1]C	[11.9]C	[11.7]C	[11.7]C	[11.7]C	[11.4]C						
10							C	C	[12.2]C	[12.7]C	[13.3]C	[14.1]C	[14.1]C	[13.8]C	[13.2]C	[12.8]C	[12.9]C	[12.5]C						
11							[8.0]C	[10.0]C	[12.0]C	[12.8]C	[13.2]C	[13.6]C	[13.6]C	[13.7]C	[13.4]C	[13.3]C	[13.0]C	[12.6]C						
12							[7.1]C	[8.8]C	[10.6]C	[12.0]C	[13.3]C	[13.8]C	[13.5]C	[13.3]C	[12.7]C	C	C	C						
13							[7.1]C	[8.9]C	[10.4]C	[11.4]C	[12.4]C	[13.2]C	[13.2]C	[12.6]C	[12.5]C	[12.3]C	[12.3]C	[11.8]C						
14							[6.8]C	[8.3]C	[9.2]C	[10.5]C	[11.9]C	[12.5]C	[12.5]C	[12.3]C	[12.0]C	[11.6]C	[11.4]C	[11.4]C						
15							CK	CK	CK	CK	CK	CK	[6.4]CK	[6.7]CK	[6.7]CK	[6.6]CK	[6.5]CK	[6.6]CK						
16							C	[8.6]C	[9.4]C	[9.8]C	[10.2]C	[11.5]C	[12.1]C	[12.4]C	[12.6]C	[12.7]C	[13.1]C	[12.9]C						
17							[6.4]C	[8.2]C	[9.6]C	[10.8]C	[11.7]C	[12.4]C	[12.6]C	[12.7]C	[12.8]C	[12.3]C	[12.2]C	[11.9]C						
18							[6.6]C	[8.7]C	[10.5]C	[11.6]C	[12.6]C	[12.8]C	[12.7]C	[12.6]C	[12.6]C	[12.3]C	[12.3]C	[12.2]C						
19							[7.1]C	[9.3]C	[10.9]C	[11.4]C	[12.1]C	[12.7]C	[12.6]C	[12.5]C	[12.4]C	[12.1]C	[12.0]C	[12.0]C						
20							[7.8]C	[9.5]C	[11.2]C	[12.0]C	[12.5]C	[12.8]C	[12.9]C	[12.9]C	[12.8]C	[12.7]C	[12.6]C	[12.5]C						
21							C	[9.0]C	[11.1]C	[12.2]C	[12.5]C	[12.7]C	[12.8]C	[13.2]C	[13.0]C	[12.9]C	[12.8]C	[12.4]C						
22							C	[8.0]C	[9.2]C	[9.9]C	[10.6]C	[10.7]C	[10.7]C	[10.8]C	[10.8]	[11.2]C	[11.1]C	C						
23							C	C	[9.2]C	[9.8]C	[10.4]C	[11.4]C	[11.5]C	[11.8]C	[11.9]C	[11.1]C	[10.8]C	[10.7]C						
24							C	[10.0]C	[11.6]C	[12.2]C	[13.0]C	[13.6]C	[13.3]C	[12.9]C	[12.7]C	[12.3]C	[12.3]C	[12.0]C						
25							C	[7.4]C	[8.0]C	C	C	C	[11.2]C	[11.1]C	[12.0]C	[11.8]C	[11.6]C	[11.2]C						
26							[6.2]C	[7.5]C	[8.8]C	[10.2]C	[11.0]C	[11.6]C	[11.6]C	[11.4]C	[11.2]C	[11.1]C	[11.0]C	[10.9]C						
27							C	[7.6]C	[9.1]C	[10.5]C	[11.4]C	[12.0]C	[12.3]C	[12.4]C	[12.3]C	[12.2]C	[12.1]C	[11.9]C						
28							CK	[5.1]CK	[5.9]CK	[4.7]K	[4.9]CK	[5.6]K	[6.2]CK	[6.9]CK	[7.1]K	[8.1]CK	[8.1]CK	[7.8]K						
29							[5.3]K	[6.3]CK	[6.7]K	[7.1]CK	[7.5]CK	[8.2]CK	[8.5]CK	[8.8]CK	[9.4]K	[9.8]CK	[10.1]K	[10.2]K						
30							[6.2]K	[7.4]CK	[8.0]K	[8.1]CK	[8.1]CK	[8.6]K	[9.3]K	[9.6]CK	[10.5]K	[11.4]CK	[11.4]CK	[11.1]CK						
31							[7.2]C	[8.8]C	[9.9]C	[11.2]C	[12.1]C	[12.6]C	[12.11]C	[12.3]C	[12.1]C	[11.8]C	[11.6]C	[11.5]C						
Median							[7.0]C	[8.8]C	[10.2]C	[11.4]C	[12.1]C	[12.6]C	[12.5]C	[12.4]C	[12.4]C	[12.3]C	[12.1]C	[11.9]C						
Count							16	25	28	27	27	28	31	31	31	30	29	28						

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE: 1948 O - 702310

TABLE 70

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), km (Unit), March (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										C	C	C	C	C	C	C	C							
2							K	K	K	C K	C K	C K	C K	(280) K	C K	C K	K	K	K					
3							K	K	K	C K	C K	C K	C K	C K	C K	C K	C K	(370) K	K					
4										C	C	C	(230)	C	C	C								
5										C	C	C	C	C	C	C								
6										C	C	C	C	C	C	C								
7										C	C	C	C	C	C	C								
8							K	K	K	C K	C K	C K	C K	C K	C K	C K	K	270 K	K					
9										C	C	C	C	C	(260)	(290)								
10										C	C	C	C	C	C	C	C							
11										C	(230)	(220)	C	C	C	C								
12										C	C	230	C	240	C	(250)								
13										C	C	C	C	C	C	230								
14										C	(270)	C	C	(250)	C	C	C							
15							K	K	K	C K	C K	C K	C K	C K	C K	C K	C K	C K	K					
16										C	C	260	270	C	C	C								
17										C	C	(250)	C	C	C	C								
18										C	C	C	C	C	C	C								
19										C	C	C	C	C	(250)	C								
20										C	C	C	C	(250)	C	(260)								
21										C	C	C	C	C	C	C								
22										C	C	C	C	C	C	C								
23										C	C	C	C	C	C	C								
24										C	C	C	C	C	C	C								
25										C	C	C	C	C	C	C								
26									C	C	(270)	C	C	C	C	C								
27										C	C	C	(270)	C	C	C								
28							K	K	K	C K	C K	C K	C K	A K	C K	280 K	280 K	K	K					1
29							K	K	(270) K	[260] C K	(250) K	260 K	(280) K	[280] C K	(270) K	(270) K	280 K	K	K					
30							K	K	K	A K	K	C K	C K	(240) K	K	B K	B K	(270) K	K					
31											(280)	270												
Median											(270)	255	C	(250)	C	(265)	C							
Count											5	6		6		6								

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 726519

TABLE 71

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F1 (Characteristic), Mc (Unit), March (Month), 1947

Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										C	C	C	C	C	C	C								
2							K	K	K	C K	C K	(5.5) K	6.0 K	C K	C K	L K	K	K	K					
3							K	K	K	C K	C K	4.7 K	5.2 K	5.1 K	(5.0) K	(4.6) K	(4.0) K	(4.0) K	K					
4										C	C	C	C	C	C	C								
5										C	C	C	C	C	C	C								
6										C	C	C	C	C	C	C								
7										C	C	C	C	C	C	C								
8							K	K	K	C K	C K	C K	C K	C K	B K	C K	K	(5.5) K	K					
9										C	C	C	C	C	C	L								
10										C	C	C	C	C	C	C	C							
11										C	C	C	C	C	C	C								
12										C	C	L	C	L	C	C								
13										C	C	C	C	C	C	C								
14										C	C	C	C	L	C	C	C							
15							K	K	K	C K	C K	C K	(5.1) K	C K	(5.0) K	[5.2] C K	(5.8) K	C K	K					
16										C	C	C	C	C	C	C								
17										C	C	C	C	C	C	C								
18										C	C	C	C	C	C	C								
19										C	C	C	C	C	C	C								
20										C	C	C	C	C	C	C								
21										C	C	C	C	C	C	C								
22										C	C	C	C	C	C	C								
23										C	C	C	C	C	C	C								
24										C	C	C	C	C	C	C								
25										C	C	C	C	C	C	C								
26										C	C	C	C	C	C	C								
27										C	C	C	C	C	C	C								
28							K	K	K	(4.6) K	4.5 K	[4.8] C K	5.0 K	(5.1) K	5.5 K	[5.5] C K	(5.4) K	K	K					
29							K	K	(4.6) K	5.1 K	5.4 K	(5.1) K	(5.7) K	[5.9] L K	(6.0) K	L K	L K	K	K					
30							K	K	K	L K	K	6.1 K	(5.1) K	6.5 K	K	L K	L K	(5.6) K	K					
31											L	L												
Medion										C	C	(5.5)	(5.4)	C	C	C								
Count												5	6											

Sweep ____ Mc to ____ Mc in ____ min

Manuol ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 722310

TABLE 72

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'E (Characteristic), km (Unit), March (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								E	E	E	C	C	C	C	A	C	E	E						
2							K	E K	E K	C K	E K	E K	E K	110 K	E K	E K	E K	E K	K					
3							K	C K	E K	C K	C K	C K	E K	E K	E K	E K	E K	E K	K					
4								E	E	C	C	C	C	C	C	C	C	E						
5								E	E	C	C	C	C	C	C	C	E	E						
6								E	E	C	C	C	C	C	C	C	C	E						
7								E	E	C	C	C	C	C	C	C	C	E						
8							K	C K	C K	C K	C K	C K	C K	C K	B K	C K	E K	E K	K					
9								E	E	C	C	C	C	C	C	C	E	E						
10								C	E	C	C	C	C	C	C	C	E	E						
11								E	E	C	C	C	C	C	C	C	E	E						
12								E	E	C	C	C	C	C	C	C	C	C						
13								E	E	C	C	C	C	C	E	100	C	E						
14								E	E	C	C	C	C	C	C	C	C	C						
15							K	C K	C K	C K	C K	C K	C K	C K	C K	C K	C K	E K	K					
16								E	E	C	C	C	C	C	C	C	E	E						
17								E	E	C	C	C	C	C	C	C	E	E						
18								E	E	C	C	C	C	C	C	C	E	E						
19								E	E	C	C	C	C	C	C	C	E	E						
20								E	E	C	C	C	C	C	C	C	E	E						
21								E	E	C	C	C	C	C	C	C	E	E						
22								E	E	C	C	C	C	C	C	110	E	E						
23								E	E	C	C	C	C	C	C	E	E	E						
24								E	C	C	C	C	C	C	C	C	C	E						
25								E	C	C	C	C	C	C	C	C	C	C						
26								E	C	C	C	C	C	C	C	C	C	E						
27								E	E	C	C	C	C	C	C	C	E	E						
28							K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	K					
29							K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	K					
30							K	E K	E K	C K	C K	C K	C K	C K	C K	B K	B K	K	K					
31								E	C	C	C	C	C	C	C	C	E	E						
Median								E	E	C	C	C	C	C	C	C	E	E						
Count																								

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O 702519

TABLE 73

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), March (Month), 1947

Observed at Washington, D.C.

Lat 39.0° N, Long 77.5° W 75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M.S.L, J.M.C.

Calculated by: R.C.C., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								E	E	C	C	C	C	C	A	C	E	E						
2							K	E^K	E^K	C^K	C^K	C^K	C^K	3.7^K	C^K	C^K	E^K	E^K	K					
3							K	C^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	K					
4								E	E	C	C	C	C	C	C	C	C	E						
5								E	E	C	C	C	C	C	C	C	E	E						
6								E	E	C	C	C	C	C	C	C	C	E						
7								E	E	C	C	C	C	C	C	C	C	E						
8							K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	B^K	C^K	E^K	E^K	K					
9								E	E	C	C	C	C	C	C	C	E	E						
10								C	E	C	C	C	C	C	C	C	E	E						
11								E	E	C	C	C	C	C	C	C	E	E						
12								E	E	C	C	C	C	C	C	C	C	C						
13								E	E	C	C	C	C	C	E	C	C	E						
14								E	E	C	C	C	C	C	C	C	C	C						
15							K	K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	K					
16								E	E	C	C	C	C	C	C	C	E	E						
17								E	E	C	C	C	C	C	C	C	E	E						
18								E	E	C	C	C	C	C	C	C	E	E						
19								E	E	C	C	C	C	C	C	C	E	E						
20								E	E	C	C	C	C	C	C	C	E	E						
21								E	E	C	C	C	C	C	C	C	E	E						
22								E	E	C	C	C	C	C	C	C	E	E						
23								E	E	C	C	C	C	C	C	E	E	E						
24								E	C	C	C	C	C	C	C	C	C	E						
25								E	C	C	C	C	C	C	C	C	C	C						
26								E	C	C	C	C	C	C	C	C	C	E						
27								E	E	C	C	C	C	C	C	C	E	E						
28							K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	K					
29							K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	K					
30							K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	B^K	B^K	K	K					
31								E	C	C	C	C	C	C	C	C	E	E						
Median								E	E	C	C	C	C	C	C	C	E	E						
Count																								

Sweep ____ Mc to ____ Mc in ____ min

Manual ☑ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE: 1946 O - 703818

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, km (Unit) March (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5° W — 75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							E	E	E	E	E	E	E	E	(3.7) 110	E	E	E	E					
2							E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K					
3							E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K					
4							E	E	E	E	E	E	E	E	E	E	E	E	E					
5							E	E	E	E	E	E	E	E	E	E	E	E	E					
6							E	E	E	E	E	E	E	E	E	E	E	E	E					
7							E	E	E	E	E	E	E	E	E	E	E	E	E					
8							E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K					
9							C	E	E	E	E	E	E	E	E	E	E	E	E					
10							C	C	E	E	E	E	E	E	E	E	E	E	E					
11							E	E	E	E	E	E	E	E	E	E	E	E	E					
12							E	E	E	E	E	E	E	E	E	E	C	C	C					
13							E	E	E	E	C	E	E	E	E	C	E	E	E					
14							E	E	E	E	E	E	E	E	E	E	E	E	E					
15							C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K					
16							E	E	E	E	E	E	E	E	E	E	E	E	E					
17							E	E	E	E	E	E	E	E	E	E	E	E	E					
18							E	E	E	E	E	E	E	E	E	E	E	E	E					
19							E	E	E	E	E	(4.5) E	E	E	E	E	E	E	E					
20							E	E	E	E	E	E	E	E	E	E	E	E	E					
21							E	E	E	E	E	E	E	E	E	E	E	E	E					
22							E	E	E	E	E	E	E	E	E	E	E	E	C					
23							E	E	E	E	E	E	E	E	E	E	E	E	E					
24							E	E	E	E	E	E	E	E	E	E	E	E	E					
25							E	E	E	E	E	E	E	E	E	E	E	E	E					
26							E	E	E	E	E	E	E	E	E	E	E	E	E					
27							E	E	E	E	E	E	E	E	E	E	E	E	E					
28							E^K	E^K	E^K	E^K	E^K	E^K	E^K	(4.5) 1.40 E^K	E^K	E^K	E^K	E^K	E^K					
29							E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K					
30							E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K	E^K					
31							E	E	E	E	E	E	E	E	E	E	E	E	E					
Median							E	E	E	E	E	E	E	E	E	E	E	E	E					
Count																								

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 708819

TABLE 75

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-M1500 (Characteristic), ____ (Unit), March (Month), 1947

Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L, J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	1.7	1.8	1.8	1.8	1.8	1.7	1.9	1.8	1.8	1.9	1.8	1.9					
2							C K	C K	(1.8) J K	1.7 K	C K	(1.6) K	1.6 K	1.7 K	1.6 K	1.6 K	1.6 K	(1.7) K	1.8 K					
3							C K	C K	C K	C K	C K	G K	(1.6) F K	(1.6) F K	1.5 K	1.5 K	(1.5) K	F K	F K					
4							(1.6) F	(1.7) F	1.9	1.8	1.8	1.8	1.9	1.9	2.0	1.9	1.7	1.7	1.8					
5							(1.6) F	(1.9) F	2.0	2.0	1.9	1.9	1.9	1.8	1.9	1.6	1.8	1.9	1.9					
6							(1.9)	2.2	2.1	2.0	C	2.0	2.0	1.8	1.9	1.9	1.8	1.8	1.8					
7							(1.5)	2.0	2.2	1.9	1.8	(2.0) J	1.7	1.8	1.8	1.8	1.8	1.8	1.9					
8							C K	C K	C K	C K	C K	C K	(1.5) J K	1.6 K	1.7 K	1.7 K	1.8 K	1.8 K	(1.7) J K					
9							C	(2.0) J	(2.2)	2.1	(2.0)	1.9	1.7	1.7	1.7	1.8	1.8	1.8	1.8					
10							C	C	2.1	1.9	(1.9)	1.8	1.9	1.8	1.8	1.8	(1.7)	1.8	1.9					
11							1.8	2.1	2.1	2.0	2.0	2.0	2.0	1.7	1.8	1.8	1.8	1.8	1.9					
12							1.8	2.0	2.0	1.9	1.9	1.8	1.7	1.8	1.7	1.8	C	C	C					
13							1.6	1.8	1.9	1.9	C	2.1	2.0	2.0	2.0	C	1.8	1.8	1.9					
14							1.5	1.7	1.7	2.0	1.8	1.8	1.8	1.9	1.9	(1.8)	1.8	1.8	1.9					
15							C K	C K	C K	C K	C K	C K	1.4 K	(1.4) K	(1.5) F K	1.6 K	1.7 K	(1.7) K	1.7 K					
16							C	2.0	(2.0)	(1.9) J	2.0	1.9	1.8	1.8	1.7	1.7	1.8	1.8	1.9					
17							2.0	(1.9)	2.1	2.0	1.8	1.9	1.8	(1.7)	1.8	1.8	1.9	1.8	2.0					
18							(1.7) F	2.1	2.0	2.0	1.9	1.9	1.8	(1.7)	1.7	1.7	1.7	1.8	1.8					
19							(1.8)	2.1	2.1	2.0	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8					
20							(1.7) F	1.9	(2.0)	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.9	1.8	1.9					
21							C	2.0	2.0	2.1	2.0	C	1.8	(1.8)	(2.0)	1.9	1.9	1.8	(1.7)					
22							C	(1.8)	(1.9)	2.0	1.9	1.8	1.8	1.8	1.7	1.7	1.8	1.9	C					
23							F	C	2.0	1.8	(1.7) F	1.6	1.7	1.6	1.7	1.9	1.7	1.8	1.9					
24							F	2.0	1.9	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0					
25							F	2.0	2.1	1.9	C	C	1.7	1.7	1.7	1.8	1.8	1.7	1.8					
26							F	(2.0) F	2.1	1.9	1.8	(1.7) F	(1.7) F	1.8	1.7	1.7	(1.7)	1.7	1.7					
27							F	(1.8) F	(2.0)	1.9	1.8	1.8	1.8	1.7	(1.7)	1.7	1.7	1.8	1.8					
28							F K	F K	(1.9) F K	(1.6) F K	G K	C K	(1.5) K	(1.5) K	FH K	1.6 K	1.6 K	1.6 K	1.8 K					
29							F K	F K	1.8 K	1.8 K	1.7 K	(1.5) K	1.6 K	(1.6) K	1.5 K	1.6 K	1.5 K	1.7 K	1.6 K					
30							(1.5) F K	(1.9) K	1.8 K	1.7 K	(1.5) K	1.8 K	1.6 K	1.6 K	1.7 K	1.6 K	1.7 K	1.9 K	1.9 K					
31							(1.6) F	2.0	1.8	1.6	1.8	1.7	1.7	1.7	1.6	1.7	1.7	1.8	1.7					
Median							(1.6)	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.8	1.8					
Count							14	23	28	28	24	26	31	31	30	30	30	29	28					

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 703519

TABLE 76

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-M3000 (Characteristic), ____ (Unit), March (Month), 1947

Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W — 75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1							C	2.6	2.7	2.7	2.7	2.7	2.6	2.8	2.7	2.7	2.9	2.8	2.9							
2							C K	C K	(2.7)J K	2.6 K	C K	(2.4) K	2.4 K	2.6 K	2.5 K	2.4 K	2.5 K	(2.6) K	2.8 K							
3							C K	C K	C K	C K	C K	G K	(2.4)F K	(2.5)F K	2.3 K	2.2 K	(2.2) K	F K	F K							
4							(2.8)F	(2.6)F	2.9	2.8	2.7	2.6	2.8	2.9	2.9	2.9	2.6	2.6	2.7							
5							(2.4)F	(2.8)F	3.0	3.0	2.8	2.8	2.8	2.7	2.8	2.5	2.7	2.8	2.8							
6							(2.8)	3.3	3.1	3.0	C	3.0	3.0	2.8	2.9	2.8	2.8	2.8	2.8							
7							(2.3)	2.9	3.2	2.9	2.7	(3.0)J	2.6	2.7	2.8	2.8	2.7	2.8	2.8							
8							C K	C K	C K	C K	C K	C K	(2.3)J K	2.5 K	2.6 K	2.6 K	2.7 K	2.7 K	(2.6)J K							
9							C	(3.0)J	(3.2)	3.1	(3.0)	2.9	2.7	2.7	2.7	2.7	2.7	2.7	2.7							
10							C	C	3.1	2.9	(2.9)	2.8	2.8	2.7	2.8	2.8	(2.6)	2.7	2.8							
11							2.7	3.0	3.1	3.0	3.0	3.0	2.9	2.7	2.7	2.7	2.7	2.7	2.8							
12							2.7	2.9	3.0	2.8	2.8	2.8	2.6	2.7	2.6	2.7	C	C	C							
13							2.5	2.8	2.9	2.8	C	3.1	3.0	3.0	2.9	C	2.7	2.7	2.8							
14							2.3	2.5	2.6	2.9	2.8	2.8	2.7	2.9	2.8	(2.8)	2.7	2.8	2.8							
15							C K	C K	C K	C K	C K	C K	2.0 K	(2.2) K	(2.4)F K	2.5 K	2.6 K	(2.6) K	2.6 K							
16							C	3.0	(2.9)	(2.8)J	3.0	2.8	2.8	2.8	2.6	2.6	2.7	2.7	2.8							
17							2.9	(2.8)	3.0	3.0	2.7	2.8	2.7	(2.7)	2.7	2.7	2.9	2.7	3.0							
18							(2.7)F	3.1	3.0	2.9	2.9	2.8	2.8	(2.6)	2.6	2.6	2.6	2.7	2.7							
19							(2.7)	3.1	3.1	3.0	3.0	2.8	2.7	2.8	2.8	2.7	2.7	2.7	2.8							
20							(2.6)F	2.9	(2.9)	3.0	2.9	2.9	2.9	2.8	2.7	2.7	2.8	2.7	2.9							
21							C	3.0	3.0	3.1	3.0	C	2.8	(2.7)	(3.0)	2.9	2.8	2.8	(2.6)							
22							C	(2.8)	(2.9)	3.0	2.9	2.8	2.7	2.8	2.5	2.6	2.7	2.8	C							
23							F	C	2.9	2.7	(2.6)F	2.5	2.6	2.5	2.6	2.8	2.6	2.7	2.8							
24							F	2.9	2.8	3.0	2.9	2.9	2.9	2.8	2.9	2.8	2.9	2.8	3.0							
25							F	3.0	3.1	2.9	C	C	2.5	2.6	2.6	2.7	2.7	2.6	2.7							
26							F	(3.0)F	3.1	2.9	2.8	(2.7)F	(2.6)F	2.7	2.6	2.7	(2.6)	2.6	2.6							
27							F	(2.7)F	(3.0)	2.9	2.7	2.7	2.7	2.6	(2.6)	2.5	2.6	2.8	2.7							
28							F K	F K	(2.8)F K	(2.4)F K	G K	C K	(2.3) K	(2.3)F K	FH K	2.4 K	2.4 K	2.5 K	2.6 K							
29							F K	F K	2.8 K	(2.7) K	2.7 K	(2.4) K	2.4 K	(2.5)F K	2.4 K	2.5 K	2.3 K	2.6 K	2.5 K							
30							(2.2)F K	(2.7) K	2.7 K	2.6 K	(2.4) K	2.7 K	2.5 K	2.4 K	2.6 K	2.5 K	2.6 K	2.8 K	2.8 K							
31							(2.4)F	3.0	2.8	2.4	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.7	2.7							
Median							(2.6)	2.9	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.7	2.7	2.7	2.8							
Count							14	23	28	28	24	26	31	31	30	30	30	29	28							

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 703519

TABLE 77

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F1-M3000 (Characteristic), ____ (Unit), March (Month), 1947

Observed at Washington, D. C.

Lat 39.0° N, Lang 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R. C. C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										C	C	C	C	C	C	C								
2							K	K	K	C K	C K	(3.2) K	3.0 K	C K	C K	L K	K	K	K					
3							K	K	K	C K	C K	3.5 K	3.3 K	C K	(3.3) K	(3.1) K	(2.9) K	(2.7) K	K					
4										C	C	C	C	C	C	C								
5										C	C	C	C	C	C	C								
6										C	C	C	C	C	C	C								
7										C	C	C	C	C	C	C								
8							K	K	K	C K	C K	C K	C K	C K	B K	C K	K	(3.5) K	K					
9										C	C	C	C	C	C	L								
10										C	C	C	C	C	C	C	C							
11										C	C	C	C	C	C	C								
12										C	C	L	C	L	C	C								
13										C	C	C	C	C	C	C								
14										C	C	C	C	C	C	C	C							
15							K	K	K	C K	C K	C K	(3.1) K	C K	C K	C K	C K	C K	K					
16										C	C	C	C	C	C	C								
17										C	C	C	C	C	C	C								
18										C	C	C	C	C	C	C								
19										C	C	C	C	C	C	C								
20										C	C	C	C	C	C	C								
21										C	C	C	C	C	C	C								
22										C	C	C	C	C	C	C								
23										C	C	C	C	C	C	C								
24										C	C	C	C	C	C	C								
25										C	C	C	C	C	C	C								
26										C	C	C	C	C	C	C								
27										C	C	C	C	C	C	C								
28							K	K	K	(3.1) K	3.4 K	C K	(3.3) K	A K	2.9 K	C K	(3.0) K	K	K					
29							K	K	(3.4) K	3.1 K	3.2 K	(3.1) K	(3.1) K	L K	(3.0) K	L K	L K	K	K					
30							K	K	K	L K	K	3.1 K	C K	3.1 K	K	L K	L K	(3.7) K	K					
31											L	L												
Median										C	C	C	(3.1)	C	C	C	C							
Count													5											

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

TABLE 78

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

E-MI500 (Characteristic), ____ (Unit), March (Month), 1947

Observed at Washington, D.C.

Lat 39.0° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. M. C.

Calculated by: R.C.C., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								E	E	C	C	C	C	C	A	C	E	E						
2							K	E K	E K	C K	C K	C K	C K	(44) K	C K	C K	E K	E K	K					
3							K	C K	C K	C K	E K	C K	C K	C K	C K	C K	E K	E K	K					
4								E	E	C	C	C	C	C	C	C	C	E						
5								E	E	C	C	C	C	C	C	C	E	E						
6								E	E	C	C	C	C	C	C	C	C	E						
7								E	E	C	C	C	C	C	C	C	C	E						
8							K	C K	C K	C K	C K	C K	C K	C K	B K	C K	E K	E K	K					
9								E	E	C	C	C	C	C	C	C	E	E						
10	·							C	E	C	C	C	C	C	C	C	E	E						
11								E	E	C	C	C	C	C	C	C	E	E						
12								E	E	C	C	C	C	C	C	C	C	C						
13								E	E	C	C	C	C	C	E	C	C	E						
14								E	E	C	C	C	C	C	C	C	C	C						
15			·				K	E K	C K	C K	C K	C K	C K	C K	C K	C K	C K	E K	K					
16								E	E	C	C	C	C	C	C	C	E	E						
17								E	E	C	C	C	C	C	C	C	E	E						
18								E	E	C	C	C	C	C	C	C	E	E						
19								E	E	C	C	C	C	C	C	C	E	E						
20								E	E	C	C	C	C	C	C	C	E	E						
21								E	E	C	C	C	C	C	C	C	E	E						
22								E	E	C	C	C	C	C	C	C	E	E						
23								E	E	C	C	C	C	C	C	C	E	E						
24								E	C	C	C	C	C	C	C	C	C	E						
25								E	C	C	C	C	C	C	C	C	C	C						
26								E	C	C	C	C	C	C	C	C	C	E						
27								E	E	C	C	C	C	C	C	C	E	E						
28							K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	K					
29							K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	K					
30							K	E K	E K	C K	C K	C K	C K	C K	C K	B K	B K	E K	K					
31								E	C	C	C	C	C	C	C	C	E	E						
Median								E	E	C	C	C	C	C	C	C	E	E						
Count																								

Sweep ____ Mc to ____ Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 2518

Table 79

Ionospheric Storminess, March 1947

Day March	Ionosphere Character* 00-12 GCT	12-24 GCT	Principal Storms Beginning GCT	End GCT	Geomagnetic Character** 00-12 GCT	12-24 GCT
1	***	1			2	1
2	***	5	--//	---/	5	5
3	***	7	----	--//	6	6
4	***	1			6	3
5	***	1			3	1
6	***	1			1	1
7	***	0			2	4
8	***	5	--//	--//	4	6
9	***	2			5	3
10	***	1			2	2
11	***	2			2	1
12	***	1			3	3
13	***	1			3	3
14	***	1			3	4
15	***	7	--//	--//	5	5
16	***	1			2	3
17	***	1			4	2
18	***	1			2	3
19	***	0			2	2
20	***	1			3	1
21	***	2			2	2
22	***	2			3	2
23	***	2			3	5
24	***	3			4	3
25	***	3			3	2
26	***	2			4	3
27	***	1			4	3
28	***	7	--//	----	6	3
29	***	5	----	----	2	3
30	***	5	----	--//	4	3
31	***	0			4	2

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, magnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

***No readable record. Refer to table 68 for detailed explanation.

/Dashes indicate continuing storm.

//Time of beginning unknown because of loss of record.

Table 80

Sudden Ionosphere Disturbances Observed at Washington, D.C.

1947 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other Phenomena
March					
5	1732	1810	Ohio, D.C., Ontario	0.0	
7	1641	1710	Ohio, D.C., Mexico, Ontario	0.0	
7	2322	2340	Mexico	0.2	
8	1255	1305	Ohio, D.C., Mexico, New York, Ontario	0.02	
9	1310	1340	Ohio, D.C., New York,	0.2	
9	1509	1525	Ohio, D.C., New York, Ontario	0.1	
11	2059	2120	Ohio, D.C., Ontario	0.3	
13	1331	1800	Ohio, D.C., Mexico, New York, Ontario	0.0	
14	1601	1800	Ohio, D.C., Mexico, New York, Ontario	0.0	
14	1819	1940	Ohio, D.C., England, Mexico, New York, Ontario	0.0	Terr.mag.pulse** 1820-1826
15	1318	1355	Ohio, D.C., Ontario	0.2	
15	1835	1930	Ohio, D.C., England, Mexico, Ontario	0.1	
15	2100	2120	Ohio, D.C., Mexico, New York, Ontario	0.05	
16	1520	1625	Ohio, D.C., Mexico, New Brunswick, Ontario	0.0	Terr.mag.pulse** 1520-1535
16	1649	1845	Ohio, D.C., Ontario	0.0	
17	1303	1315	Ohio, D.C., Mexico, Ontario	0.05	
17	1455	1520	Ohio, D.C., Mexico, Ontario	0.02	
18	1920	2000	Ohio, D.C., Ontario	0.1	
22	2041	2105	Ohio, D.C., Mexico, Ontario	0.1	
29	1216	1300	England	0.1	
30	1921	2000	Ohio, D.C., Mexico, New Brunswick, New York, Ontario	0.0	
31	1702	1735	Ohio, D.C., Mexico, Ontario	0.05	

*Ratio of received field intensity during SID to average field intensity before and after, for station W8XAL, 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station XEWW, 9500 kilocycles, 3000 kilometers distant, was used for the SID on March 7 at 2322; Station GLH, 13525 kilocycles, received in New York, 5340 kilometers distant, was used for the SID on March 29.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

Table 81

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Received in England

1947 Day	GCT Beginning	GCT End	Receiving Station	Location of Transmitters
February				
26	1025	1115	Brentwood	Austria, Belgian Congo, Brazil, Canary Islands, Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
26	1035	1050	Somerton	Argentina, Ascension Island, Australia, Barbados, China, Egypt, Gold Coast, Japan, Union of S. Africa
28	1220	1300	Brentwood	Austria, Belgian Congo, Brazil, Bulgaria, Canary Islands, Chile, Colombia, Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Surinam, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
28	1230	1315	Somerton	Argentina, Ascension Island, Barbados, Egypt, Gold Coast, Union of S. Africa
March				
1	1005	1025	Brentwood	Austria, Portugal, Southern Rhodesia, Spain, Zanzibar
2	1035	1105	Brentwood	Austria, Belgian Congo, Bulgaria, Greece, India, Iran, Madagascar, Palestine, Spain, Syria, Turkey, U.S.S.R., Yugoslavia
2	1037	1055	Somerton	Ascension Island, Ceylon, Egypt, India, Japan
5	0730	0840	Brentwood	Belgian Congo, Bulgaria, French Equatorial Africa, India, Iran, Kenya, Madagascar, Palestine, Southern Rhodesia, Yugoslavia, Zanzibar
5	0748	0900	Somerton	Ceylon, India, Union of S. Africa
5	0930	1010	Brentwood	Austria, Belgian Congo, Brazil, Iran, India, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Syria, Turkey, Zanzibar
5	0940	1015	Somerton	Argentina, Ascension Island, Australia, Barbados, Ceylon, China, Egypt, Gold Coast, India, Japan, Union of S. Africa
8	1250	1310	Brentwood	Austria, Belgian Congo, Brazil, Canary Islands, Chile, Colombia, Greece, India, Iran, Kenya, Madagascar, Malta, Palestine, Portugal, Spain, Surinam, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
8	1252	1310	Somerton	Argentina, Ascension Island, Australia, Barbados, Canada, Ceylon, China, Egypt, Gold Coast, Japan, New York, Union of S. Africa
11	1200	1240	Brentwood	Austria, Belgian Congo, Brazil, Canary Islands, Chile, Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Turkey, U.S.S.R., Yugoslavia, Zanzibar
11	1210	1245	Somerton	Argentina, Ascension Island, Barbados, Canada, Ceylon, China, Egypt, Gold Coast, New York, Union of S. Africa
13	1028	1055	Brentwood	Austria, Barbados, Belgian Congo, Brazil, Kenya, Madagascar, Southern Rhodesia, Spain, Turkey, Yugoslavia, Zanzibar
13	1038	1105	Somerton	Argentina, Ascension Island, Ceylon, Union of S. Africa
13	1330	1420	Brentwood	Austria, Belgian Congo, Brazil, Bulgaria, Canary Islands, Chile, Colombia, Greece, India, Iran, Kenya, Madagascar, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
13	1337	1500	Somerton	Argentina, Ascension Island, Barbados, Egypt, Gold Coast, New York, Union of S. Africa
14	0700	0735	Brentwood	Belgian Congo, French Equatorial Africa, Greece, India, Iran, Kenya, Southern Rhodesia
14	1315	1345	Brentwood	Brazil, Canary Islands, Chile, India, Switzerland
16	0730	0820	Brentwood	Belgian Congo, French Equatorial Africa, Greece, India, Iran, Kenya, Madagascar, U.S.S.R., Southern Rhodesia
17	0745	0845	Brentwood	Austria, Belgian Congo, Greece, India, Iran, Kenya, Madagascar, Portugal, Southern Rhodesia, Syria, Turkey, Zanzibar
17	1300	1330	Brentwood	Austria, Belgian Congo, Brazil, Bulgaria, Greece, India, Iran, Kenya, Malta, Palestine, Portugal, Southern Rhodesia, Spain, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
17	1303	1312	Somerton	Argentina, Ascension Island, Barbados, China, Egypt, Gold Coast, Union of S. Africa

Note - Obaervers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere diaturbances, for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 82

Provisional Radio Propagation Quality Figures
February 1947
Compared with CRPL Warnings and CRPL Probable Disturbed Period Forecasts

Day	North Atlantic Quality Figure		North Atlantic CRPL* Warning		North Atlantic CRPL Probable Disturbed Period Forecast		North Atlantic Geomagnetic K_{ch}		North Pacific Quality Figure		North Pacific CRPL* Warning		North Pacific CRPL Probable Disturbed Period Forecast		North Pacific Geomagnetic K_{ch}	
	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT			01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT			01-12 GCT	13-24 GCT
1	6	7					2	1	6	6					2	1
2	7	7					0	1	7	6					0	1
3	6	6					2	2	6	5					2	2
4	6	7					3	1	6	5					3	1
5	6	7					1	2	6	6					1	2
6	6	6					3	2	6	5					3	2
7	6	6					1	2	6	5					1	2
8	5	(4)		X			3	3	5	5		X			3	3
9	5	6	X				4	3	6	(4)	X				4	3
10	6	6	X				3	2	6	5	X				3	2
11	7	6					1	2	5	7					1	2
12	7	6			X		1	1	6	8			X		1	1
13	6	6			X		1	1	7	6			X		1	1
14	7	6					1	1	5	5					1	1
15	7	7					1	1	6	(4)					1	1
16	7	(4)		X			3	4	5	(4)		X			3	4
17	(4)	(4)	X	X			5	2	6	5	X	X			5	2
18	5	5	X				2	2	5	5	X				2	2
19	6	5					2	4	5	5					2	4
20	6	6	X				2	1	6	7	X				2	1
21	7	6			X		0	1	7	8			X		0	1
22	7	7			X		0	1	8	7			X		0	1
23	7	7			X		0	0	7	8			X		0	0
24	7	7					1	2	5	(4)					1	2
25	7	7					2	2	7	6					2	2
26	6	7					3	2	6	6					3	2
27	6	7					1	0	7	6					1	0
28	6	6					2	2	6	5					2	2
Score:																
H			3		0						1		0			
M			0		3						3		4			
G			21		20						19		19			
(S)			2		0						3		0			
S			2		5						2		5			

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast.

Quality Figure Scale:
1 = Useless
2 = Very poor
3 = Poor
4 = Poor to fair
5 = Fair
6 = Fair to good
7 = Good
8 = Very good
9 = Excellent

Symbols
X Warning given or probable disturbed date.

H Quality 4 or worse on day or half day of warning.

M Quality 4 or worse on day or half day of no warning.

G Quality 5 or better on day of no warning.

(S) Quality 5 on day of warning.

S Quality 6 or better on day of warning.

( ) Quality 4 or worse (disturbed).

Geomagnetic K_{ch} on the standard scale of 0 to 9, 9 representing the greatest disturbance.

Table 83

Daily Median Values of American Relative Sunspot Numbers *

March 1947

Date	No.	Date	No.
1	120	16	82
2	114	17	60
3	115	18	56
4	156	19	46
5	196	20	68
6	208	21	83
7	213	22	102
8	162	23	124
9	174	24	118
10	174	25	109
11	185	26	124
12	173	27	141
13	158	28	171
14	121	29	166
15	108	30	175
		31	198
No. of Days 31		Mean 135.5	

* Median of data from 17 observers

Table 84

CORONAL OBSERVATIONS AT CLIMAX, COLORADO

March 1947

First row - green line 5303A
Second row - red line 6374A
Third row - red line 6704A

Degrees from astronomical north

Date	Time of observation GCT	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175
6	1622-1701	11	12	13	16	16	16	14	17	22	18	21	22	19	17	18	18	41	38	36	28	22	18	13	11	10	11	12	14	15	13	10	5	-	4	6	10
											12	10	18	14	9	8	20	12	11	11	10	6	3														
13	1539-1605	10	12	12	13	1	1	1	1	1	1	2	2	1	1	3	4	5	5	5	4	2	1	1													
	1654-1700					14	15	20	30	35	34	20	15	10	8	8	12	15	18	19	19	17	17	16	15	12	12	12	12	12	11	7	4	3	3	3	3
								1	2	6	3	9	4	1	1	1	4	8	10	4	2	2	1	1	1							1	1				
19	1751-1818	6	7	8	8	8	10	12	12	15	21	21	18	18	18	17	17	28	32	33	30	23	16	13	12	10	8	6	6	3	3	3	3	3	3	3	4
					1	1	3	2	2	5	5	4	1			1	3	5	8	8	2	1															
21	1620-1648	6	8	8	10	12	12	13	15	27	23	19	17	16	17	18	20	20	22	21	17	12	9	12	15	8	5	5	5	5	--	--	--	--	--	--	5
						1	1	3	1							1	1	2	4	1																	
22	1530-1605	6	8	9	10	12	14	17	21	27	24	21	20	17	14	18	22	22	25	20	10	6	6	6	5	5	--	--	--	--	--	--	--	--	--	--	--
						1	2	2	1					1	2	3	3	3	1	4	8	3	1														
20	1853-1912	X	X	X	X	X	X	X	X	X	18	20	23	21	18	20	20	22	22	21	21	17	13	6	8	8	5	5	4	3	--	--	--	--	--	3	4
																	1	1	3	1																
27	1607-1633	3	4	5	7	8	9	9	8	5	9	13	13	13	12	11	20	25	25	22	25	20	13	10	8	6	6	5	4	3	4	5	5	5	5	6	5
																1	1	3	10	5	2	1	1	1	3	2	1	1	1							
																		3	3	3																	

Degrees from astronomical north

Date	Time of observation GCT	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
6	1622-1701	10	9	--	9	10	12	10	12	13	14	13	13	12	11	10	10	14	26	20	25	15	10	9	13	14	8	5	7	7	6	--	--	--	4	8	9
											5	4	3				1	1	14	12	11	10	2														
13	1539-1605	3	5	6	8	13	20	26	28	30	34	34	1	1	2	1	2	5	8	6	5	1	1														
	1654-1700		1	1	3	7	5	7	5	3	1	3	33	20	15	14	11	10	7	6	6	10	12	13	10	6	4	4	3	3	4	4	5	5	6	6	5
													5	3	1						1	1															
19	1751-1818	3	6	6	4	4	7	12	15	20	27	34	37	36	29	20	22	28	31	28	22	18	16	15	14	13	12	10	8	6	6	6	6	6	7	8	6
									1	3	11	8	5	9	12	3	4	9	4	1	1																
21	1620-1648	5	5	5	5	7	8	12	15	15	23	30	25	18	15	16	19	21	24	24	20	16	16	17	15	11	7	6	5	5	5	5	5	5	--	--	5
										1	3	10	7	5	2	4	3	1	5	3	2	2															
22	1530-1605	5	5	5	5	5	5	6	8	12	20	26	23	18	14	14	19	24	26	20	18	16	15	18	15	10	8	7	6	6	--	--	--	--	--	--	--
									1	1	4	9	3	1	1	1	1	1																			
20	1853-1912	4	4	5	5	8	12	14	15	19	22	31	34	28	23	18	18	21	26	25	23	20	18	17	15	12	8	6	5	5	5	5	5	4	4	4	--
								1	1	3	3	6	10	11	5	2	5	5	3	9	1	1															
27	1607-1633	5	5	5	7	8	6	6	13	20	34	35	28	16	11	5	7	11	13	15	17	10	8	5	4	3	3	3	3	4	4	3	2	--	--	--	2
									1	3	11	14	10	5	3	1																					
												3																										

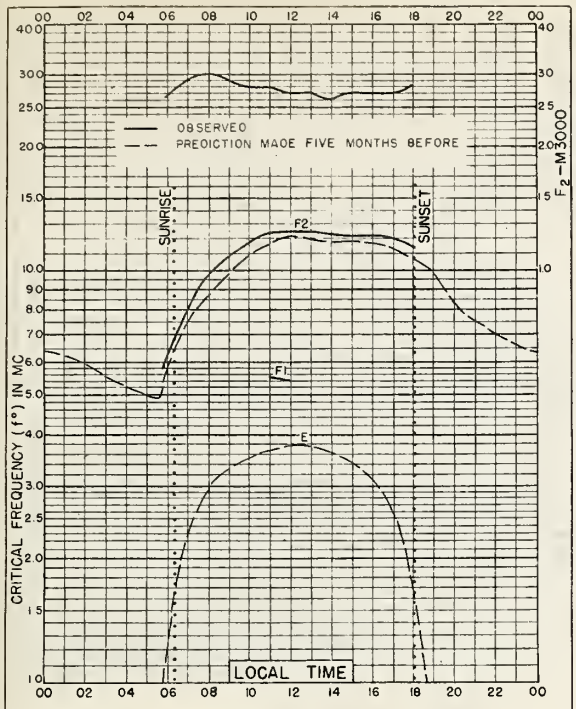

Fig. 1. WASHINGTON, D.C.
39.0°N, 77.5° W MARCH 1947

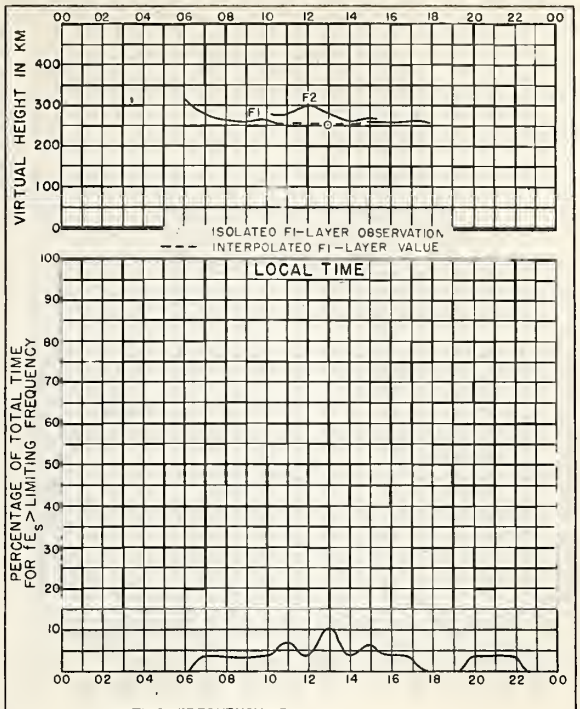

Fig. 2. WASHINGTON, D.C. MARCH 1947

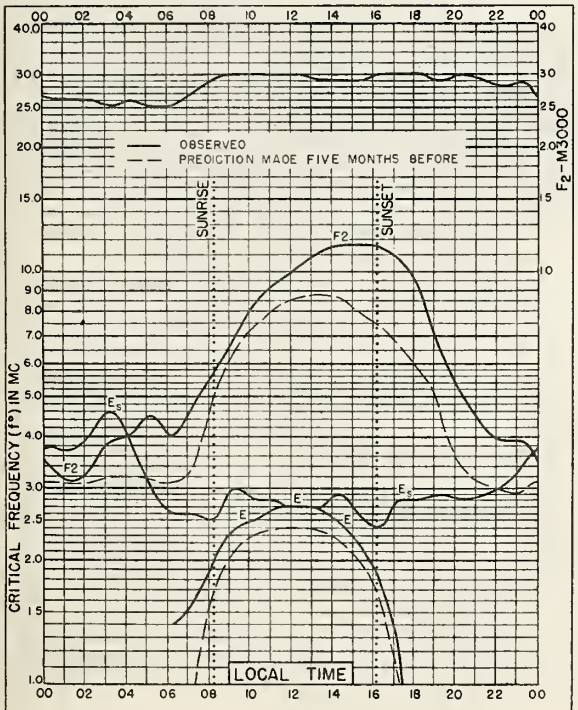

Fig. 3. FAIRBANKS, ALASKA
64.9°N, 147.8°W FEBRUARY 1947

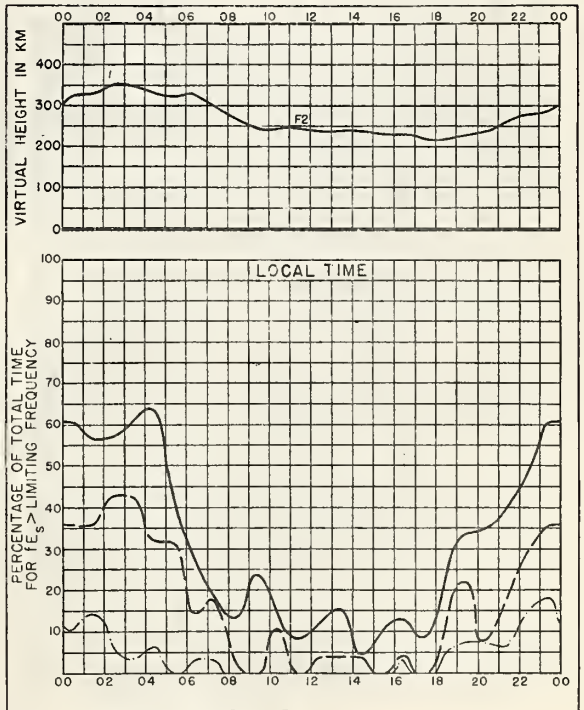

Fig. 4. FAIRBANKS, ALASKA FEBRUARY 1947

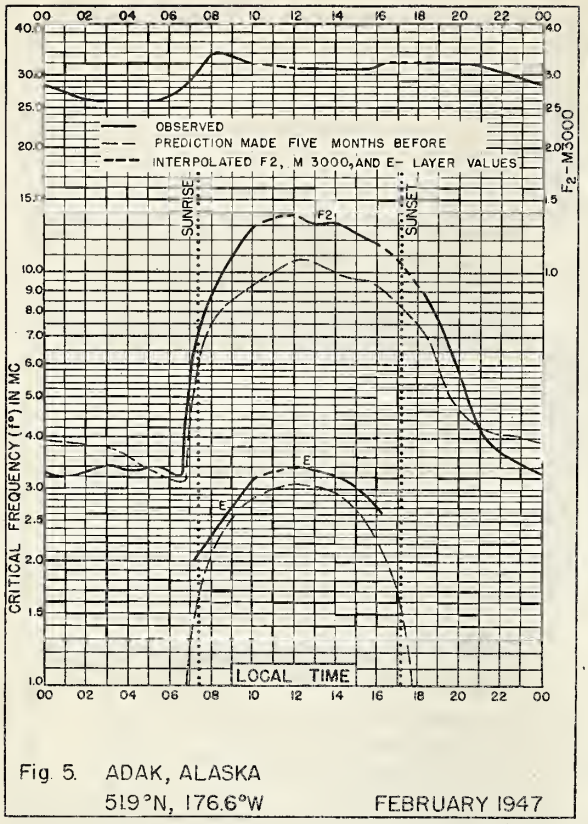

Fig. 5. ADAK, ALASKA
51.9°N, 176.6°W FEBRUARY 1947

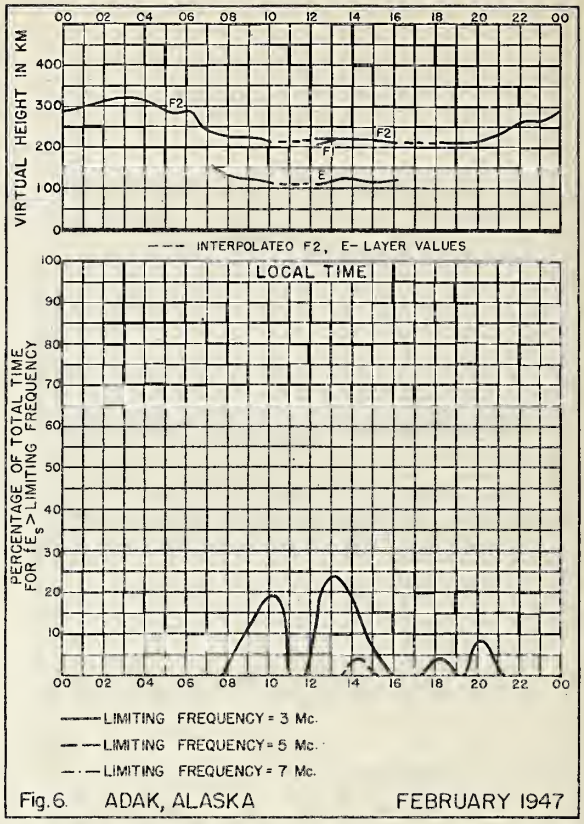

Fig. 6. ADAK, ALASKA FEBRUARY 1947

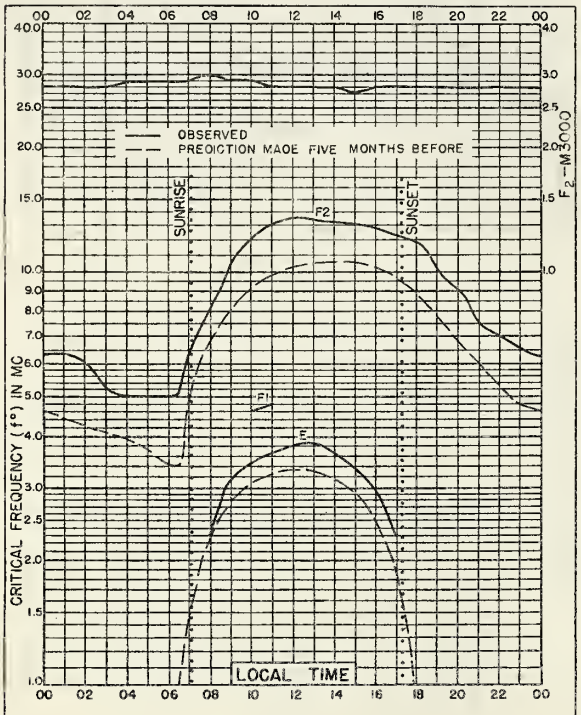

Fig. 7. OTTAWA, CANADA
45.5°N, 75.8°W FEBRUARY 1947

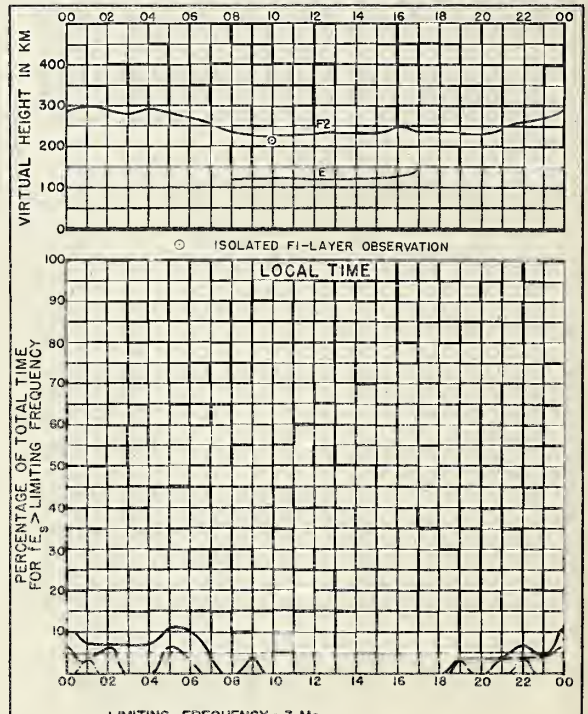

Fig. 8. OTTAWA, CANADA FEBRUARY 1947

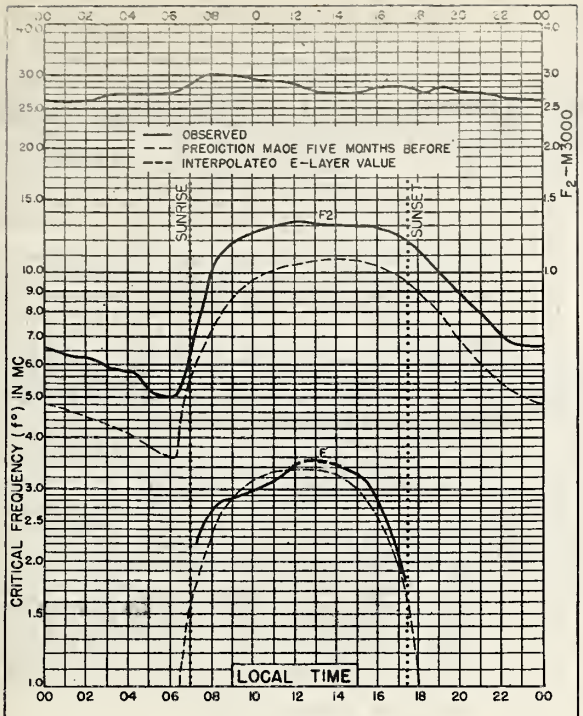

Fig. 9. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W FEBRUARY 1947

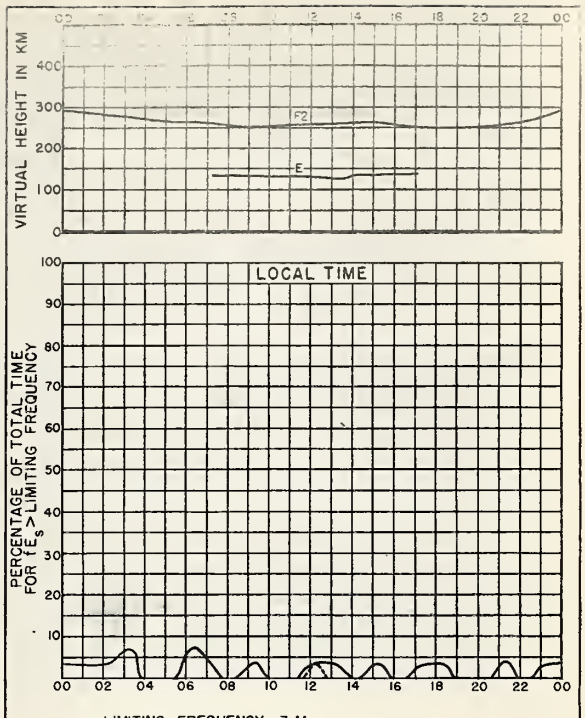

Fig. 10. BOSTON, MASSACHUSETTS FEBRUARY 1947

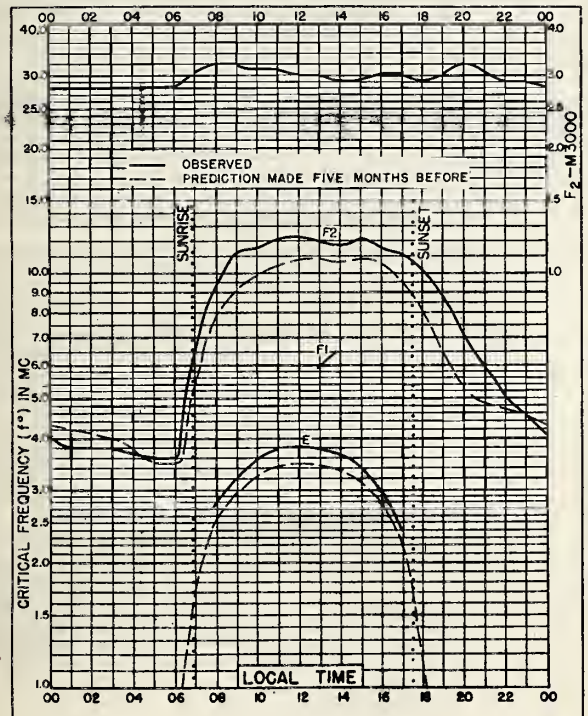

Fig. 11. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W FEBRUARY 1947

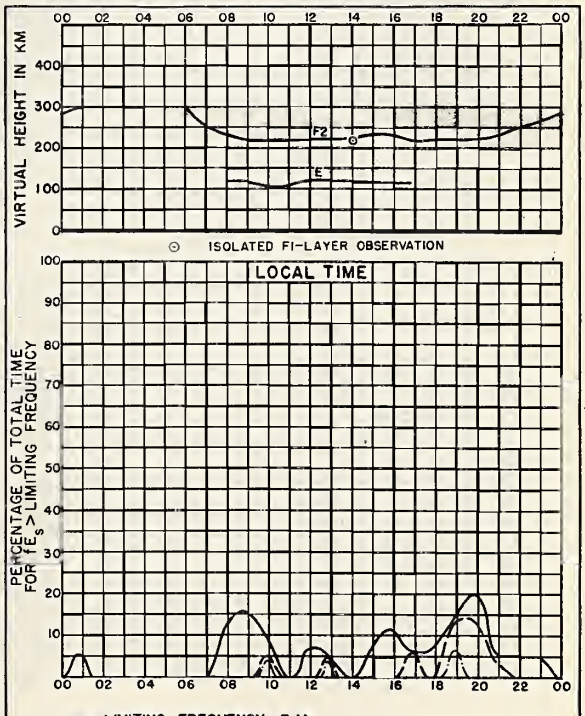

Fig. 12. SAN FRANCISCO, CALIFORNIA FEBRUARY 1947

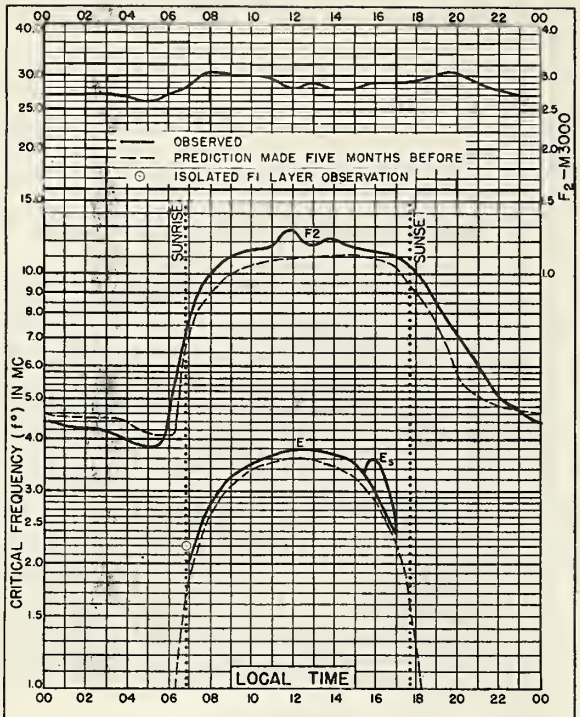

Fig. 13. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W FEBRUARY 1947

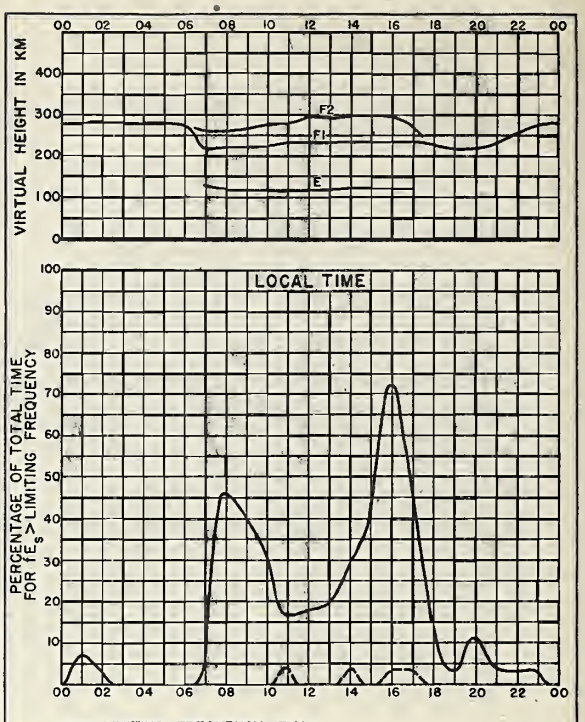

Fig. 14. WHITE SANDS, NEW MEXICO FEBRUARY 1947

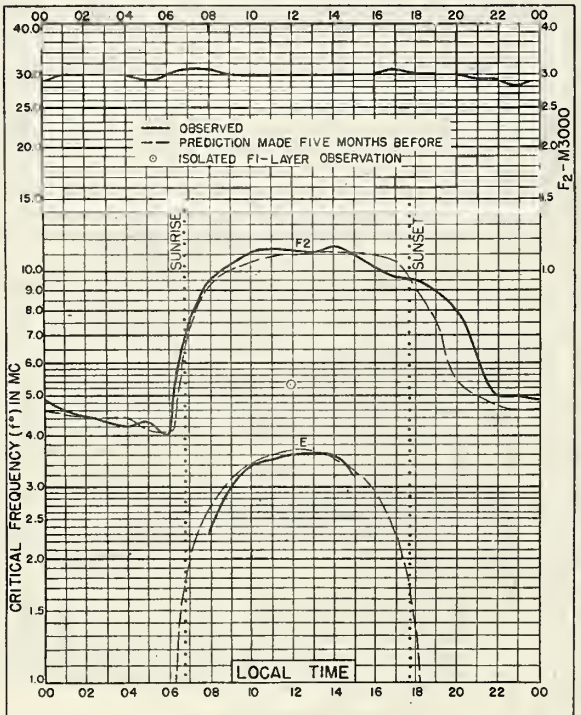

Fig. 15. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W FEBRUARY 1947

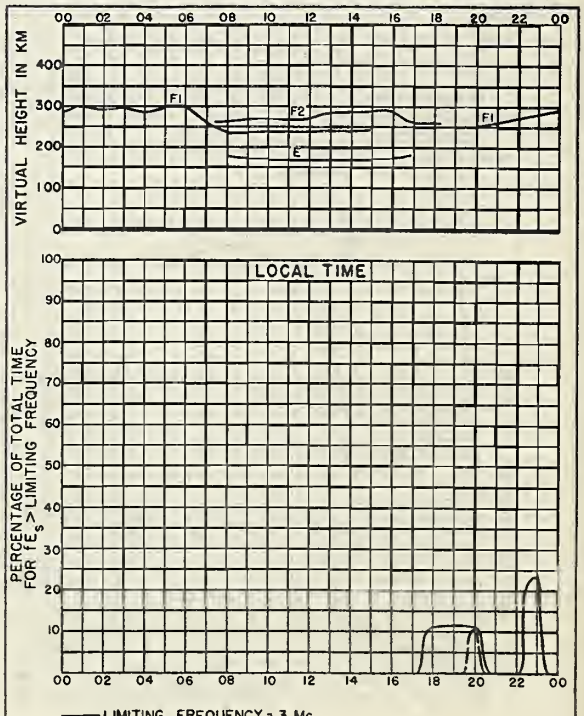

Fig. 16. BATON ROUGE, LOUISIANA FEBRUARY 1947

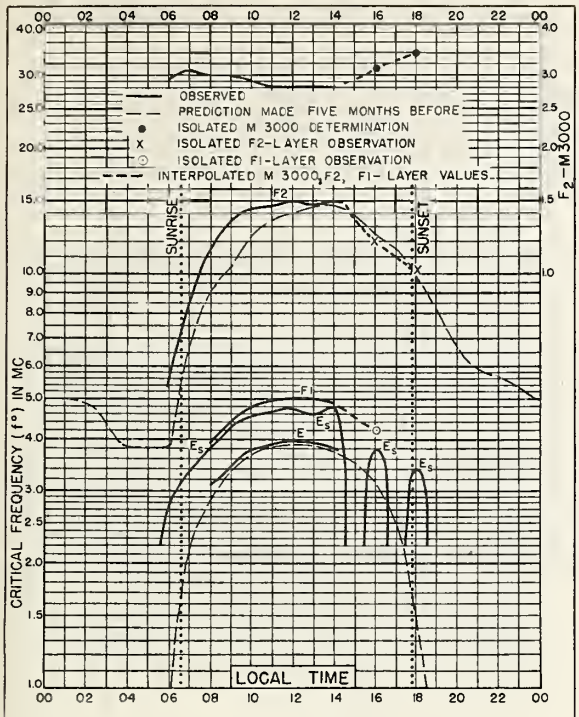

Fig. 17. MAUI, HAWAII
20.8°N, 156.5°W FEBRUARY 1947

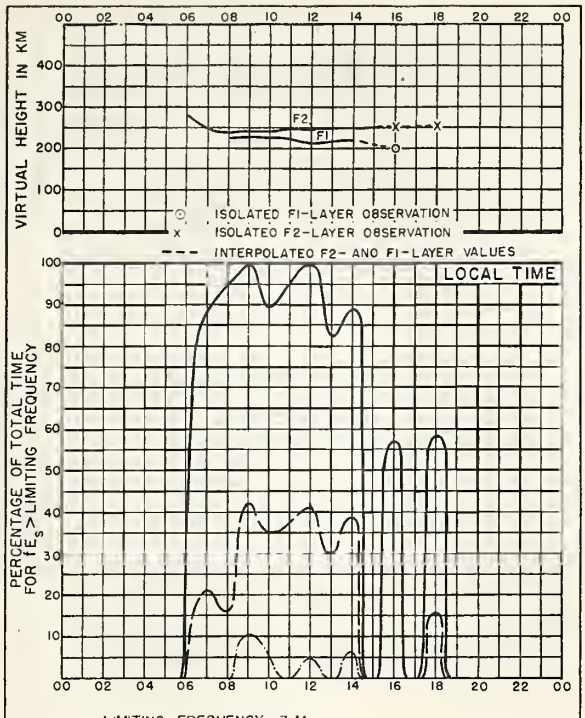

Fig. 18. MAUI, HAWAII FEBRUARY 1947

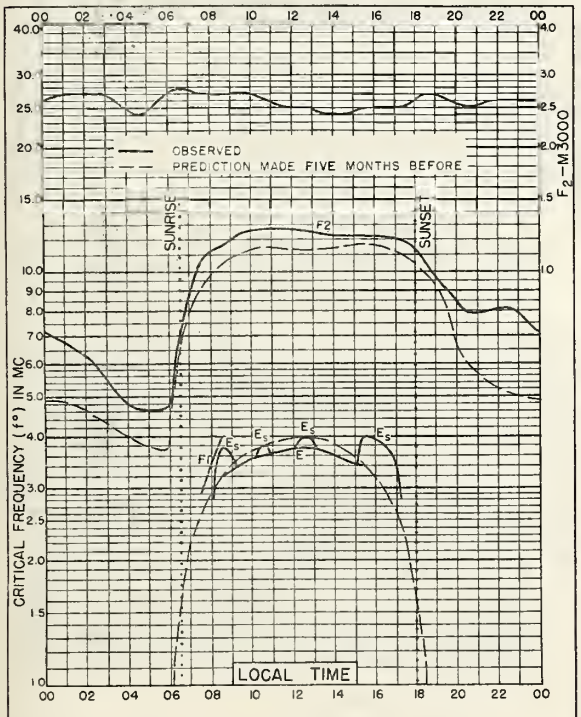

Fig. 19. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W FEBRUARY 1947

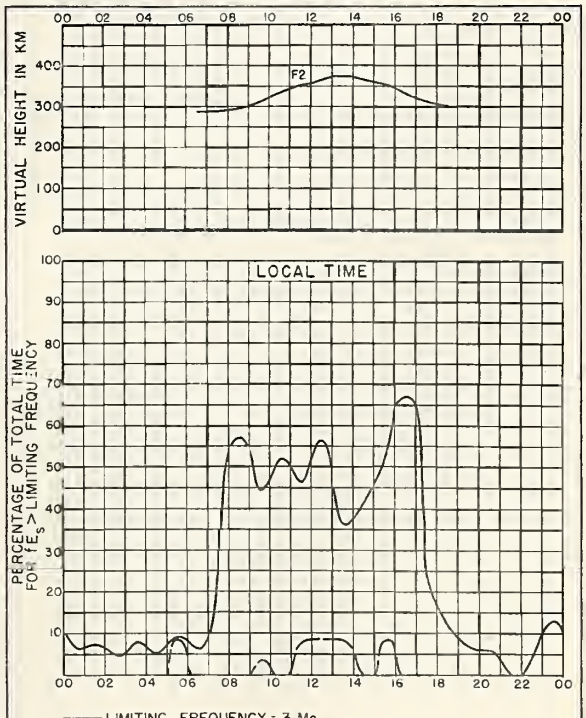

Fig. 20. SAN JUAN, PUERTO RICO FERUARY 1947

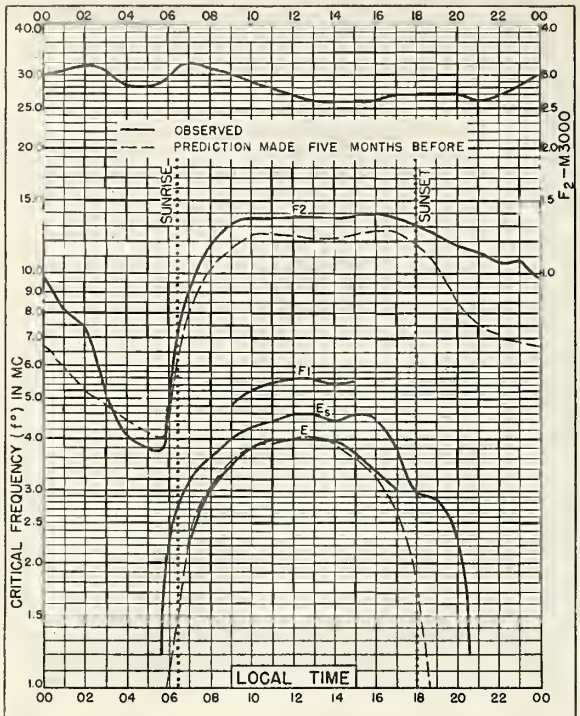

Fig. 21. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W FEBRUARY 1947

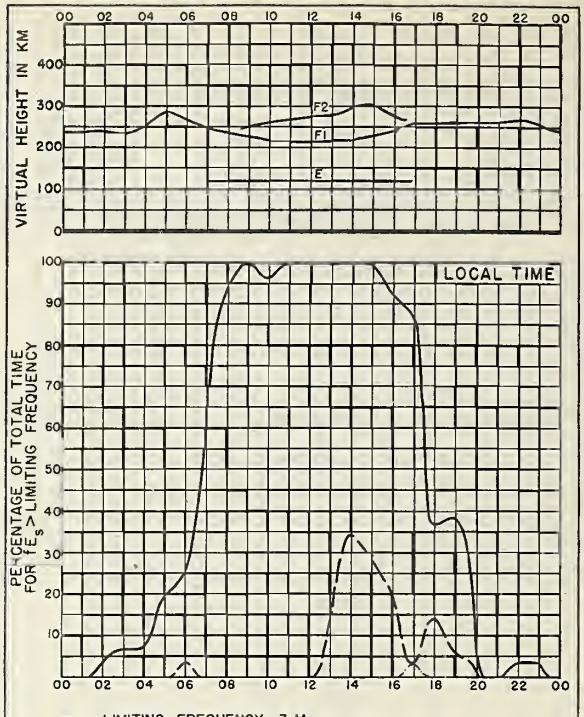

Fig 22. TRINIDAD, BRIT. WEST INDIES FEBRUARY 1947

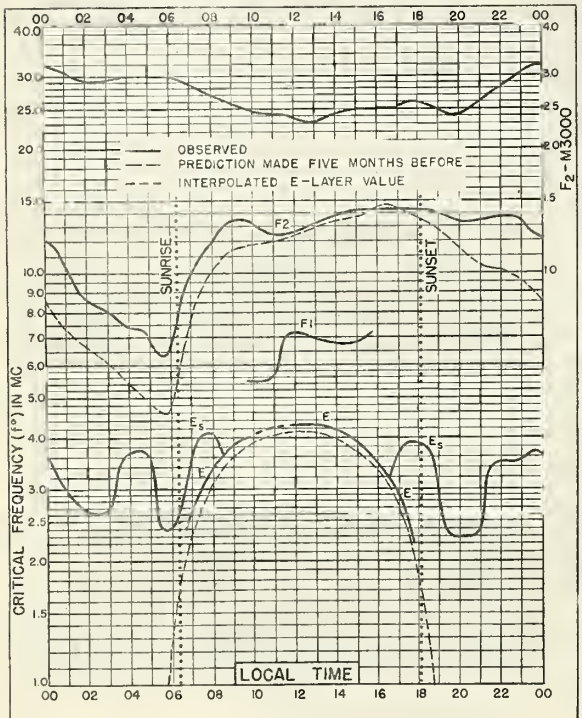

Fig. 23. PALMYRA I.
5.9°N, 162.1°W FEBRUARY 1947

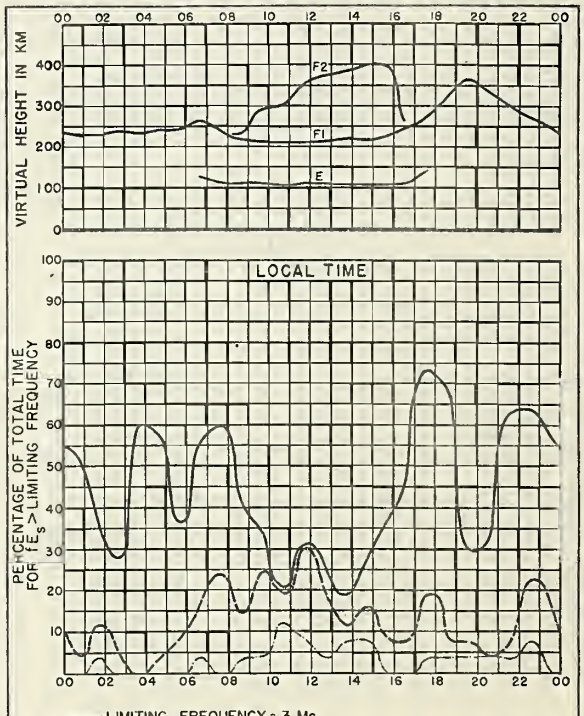

Fig 24. PALMYRA I. FEBRUARY 1947

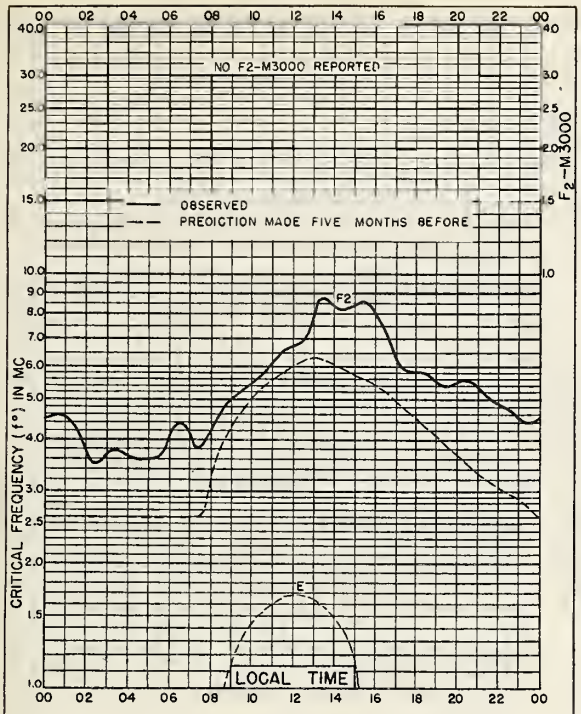

Fig. 25. CLYDE, BAFFIN I.
70.5°N, 68.6°W JANUARY 1947

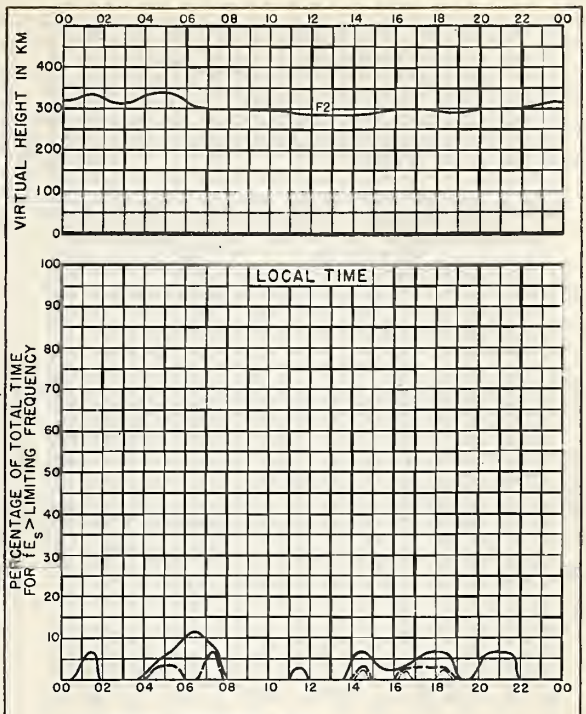

Fig. 26. CLYDE, BAFFIN I. JANUARY 1947

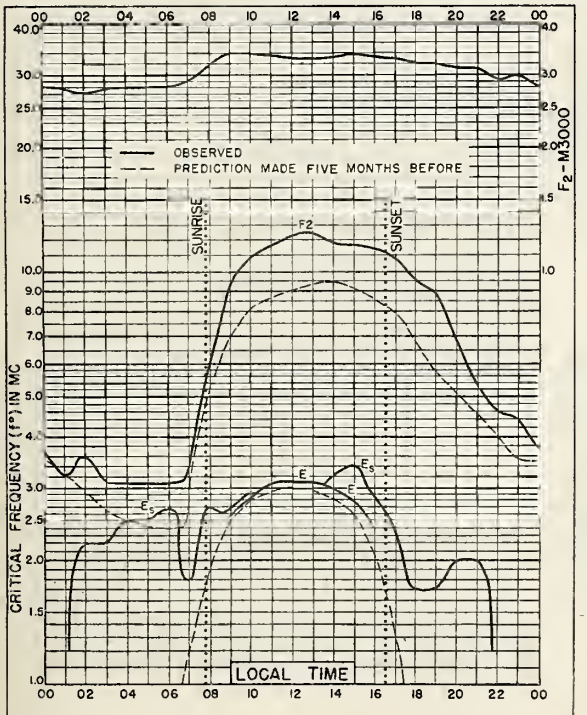

Fig. 27. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JANUARY 1947

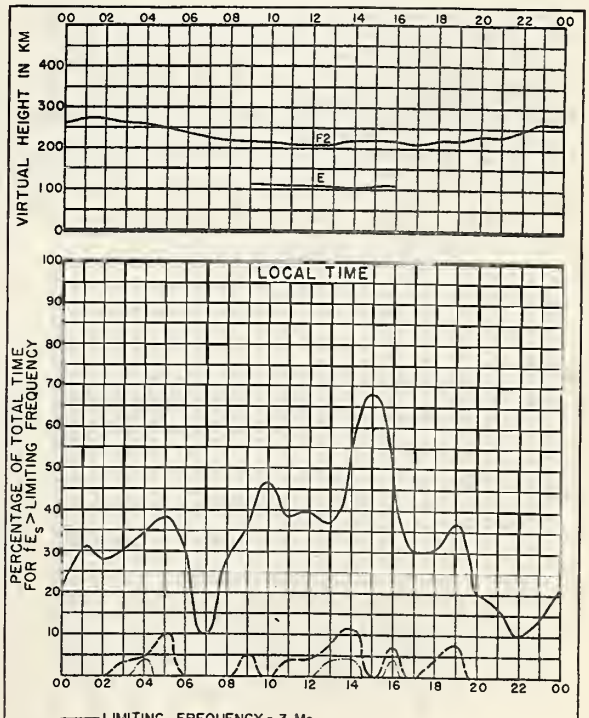

Fig. 28. ST. JOHN'S, NEWFOUNDLAND JANUARY 1947

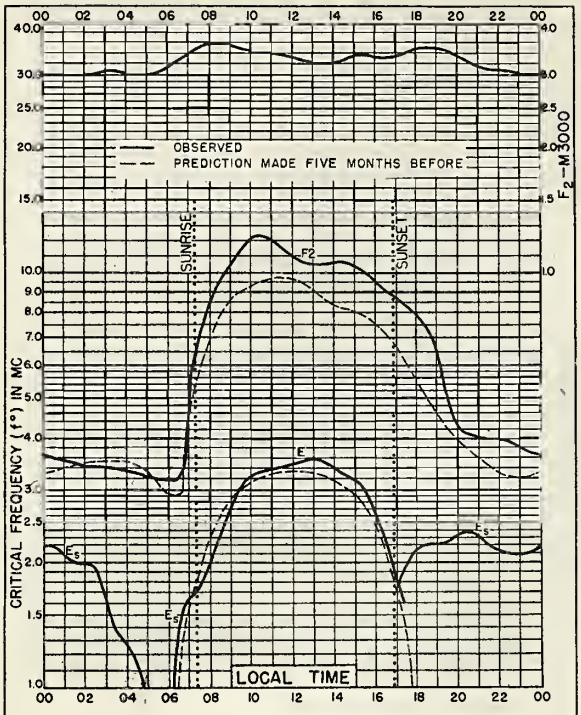

Fig. 29. SHIBATA, JAPAN
37.9°N, 139.3°E
JANUARY 1947

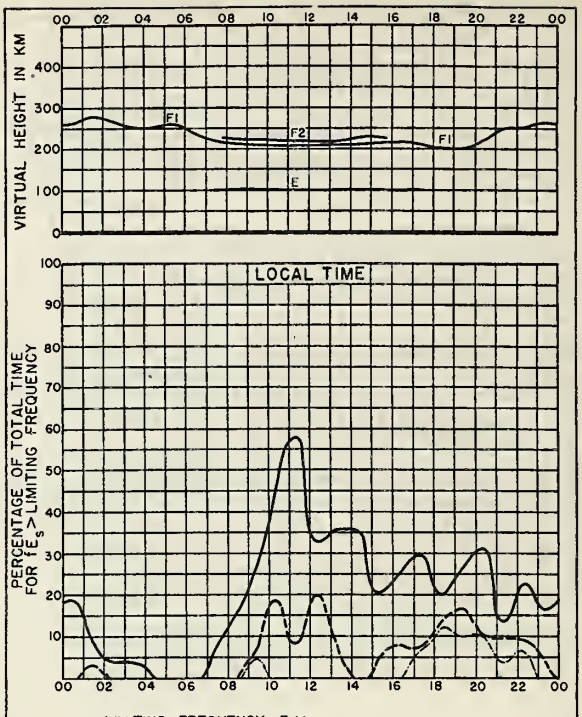

Fig. 30. SHIBATA, JAPAN
JANUARY 1947

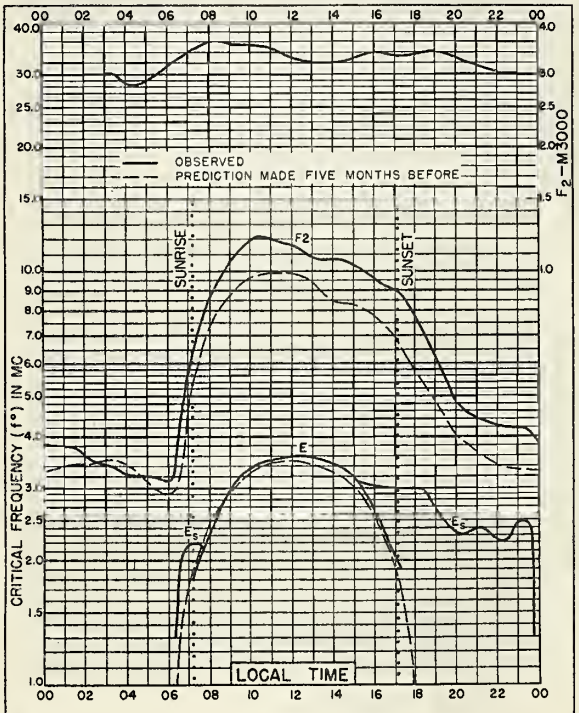

Fig. 31. TOKYO, JAPAN
35.6°N, 139.6°E
JANUARY 1947

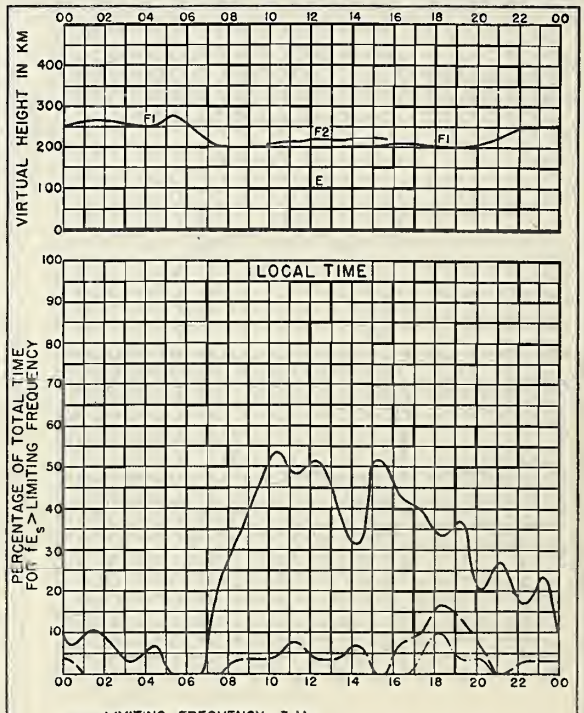

Fig. 32. TOKYO, JAPAN
JANUARY 1947

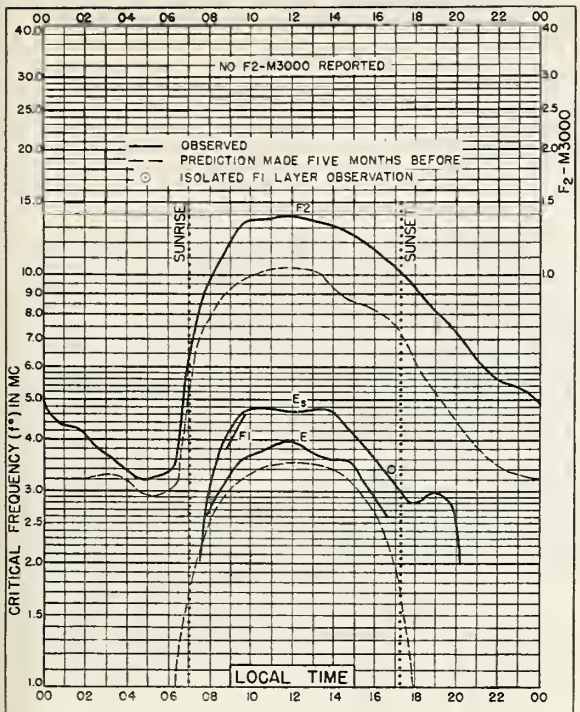

Fig. 33. YAMAKAWA, JAPAN
32.2°N, 130.6°E JANUARY 1947

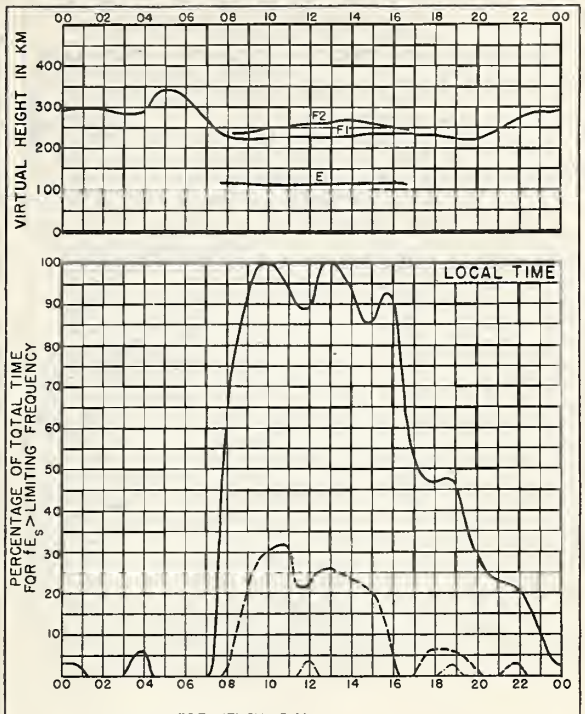

Fig. 34. YAMAKAWA, JAPAN JANUARY 1947

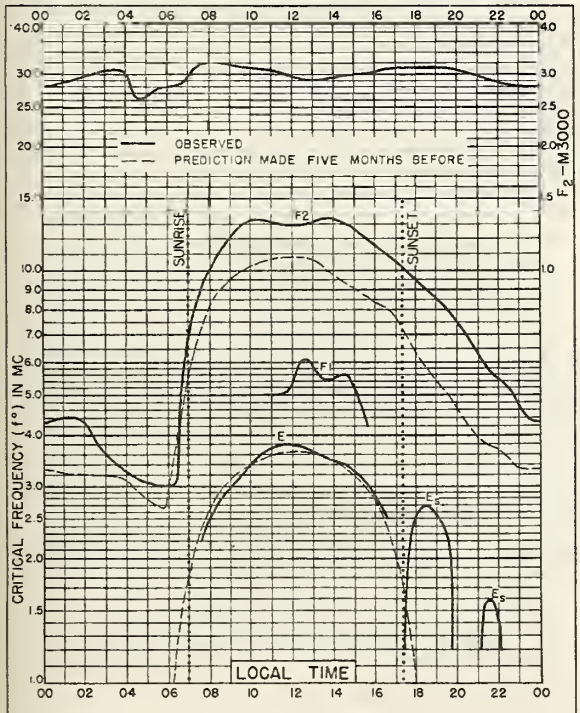

Fig. 35. WUCHANG, CHINA
30.6°N, 114.4°E JANUARY 1947

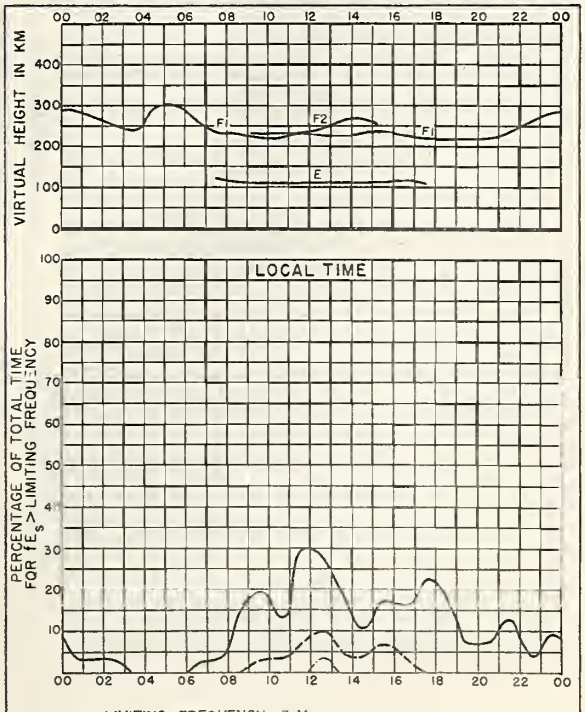

Fig. 36. WUCHANG, CHINA JANUARY 1947

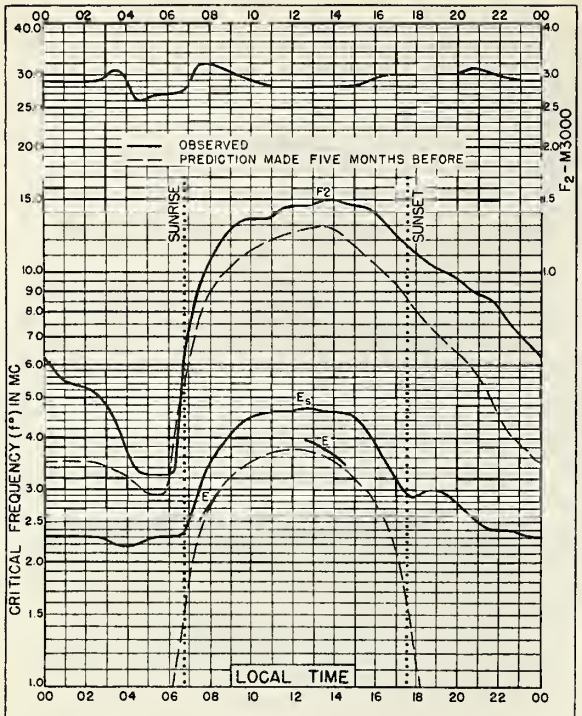

Fig 37. OKINAWA I
26.3°N, 127.8°E
JANUARY 1947

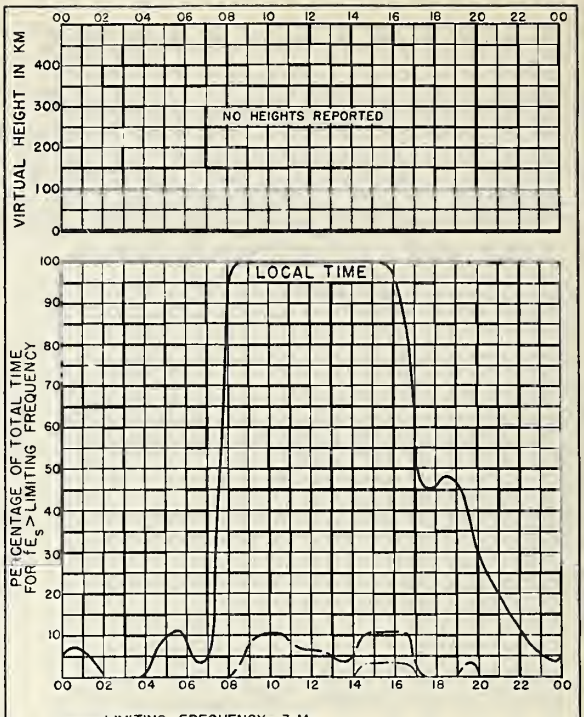

Fig 38. OKINAWA I.
JANUARY 1947

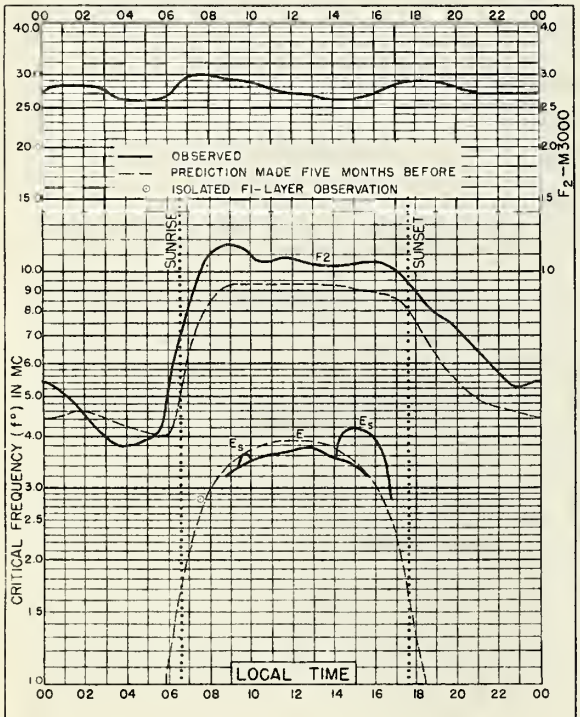

Fig 39. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W
JANUARY 1947

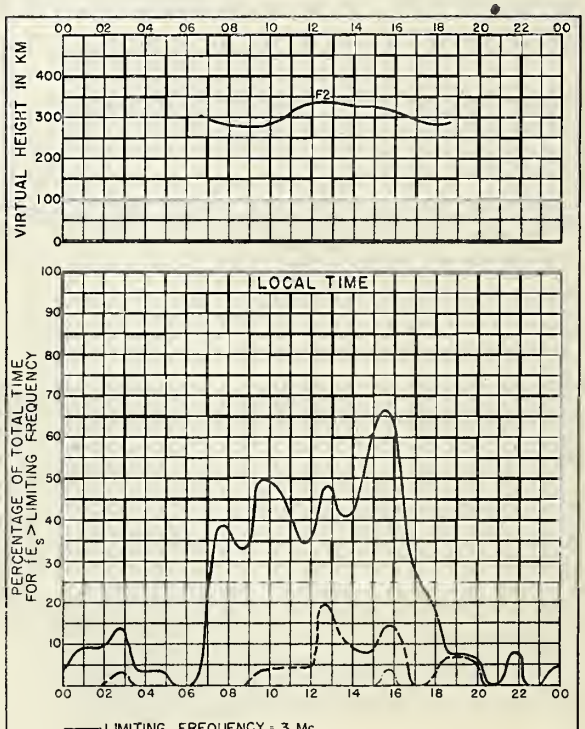

Fig 40. SAN JUAN, PUERTO RICO
JANUARY 1947

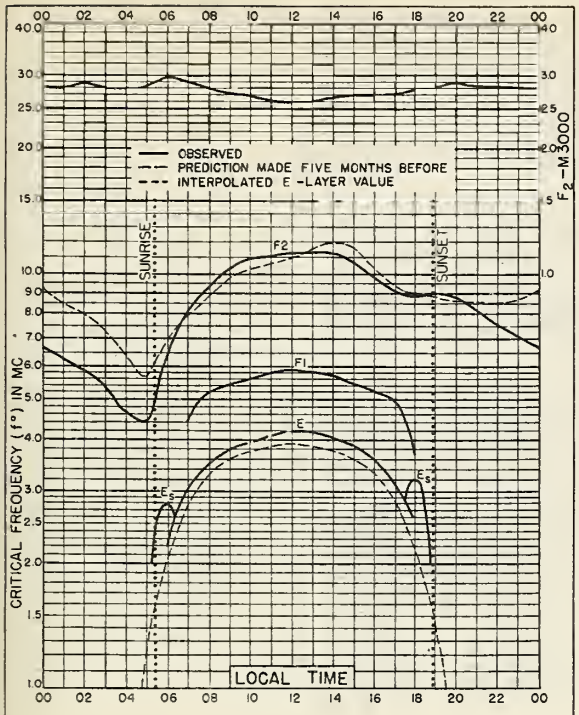

Fig. 41. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E JANUARY 1947

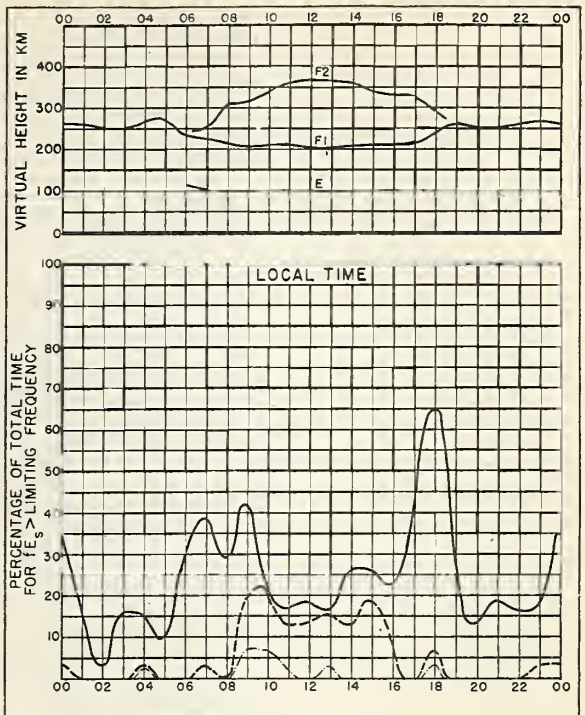

Fig. 42. JOHANNESBURG, UNION OF S. AFRICA JANUARY 1947

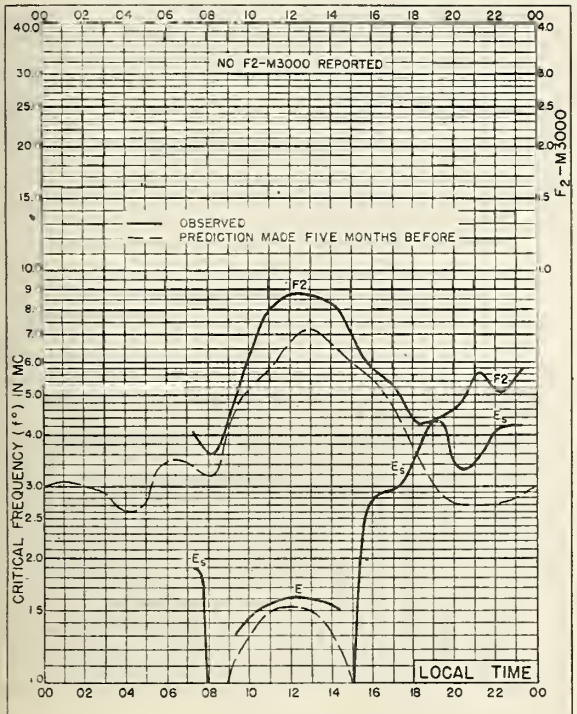

Fig. 43. TROMSO, NORWAY
69.7°N, 18.9°E DECEMBER 1946

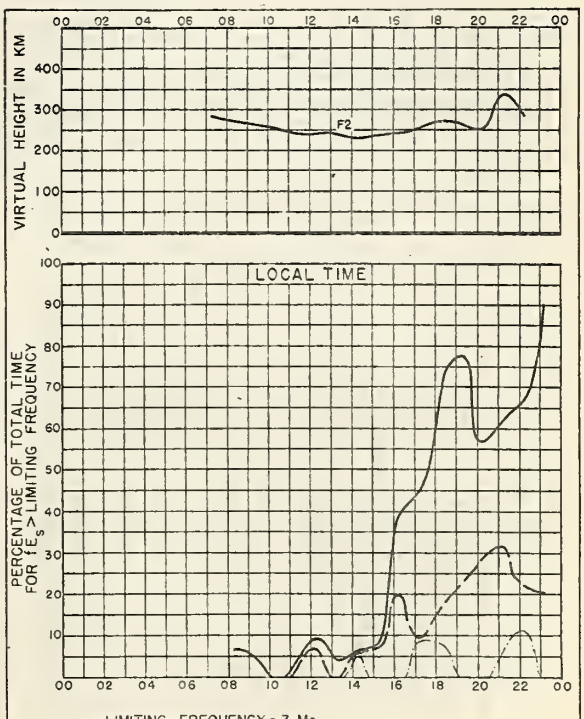

Fig. 44. TROMSO, NORWAY DECEMBER 1946

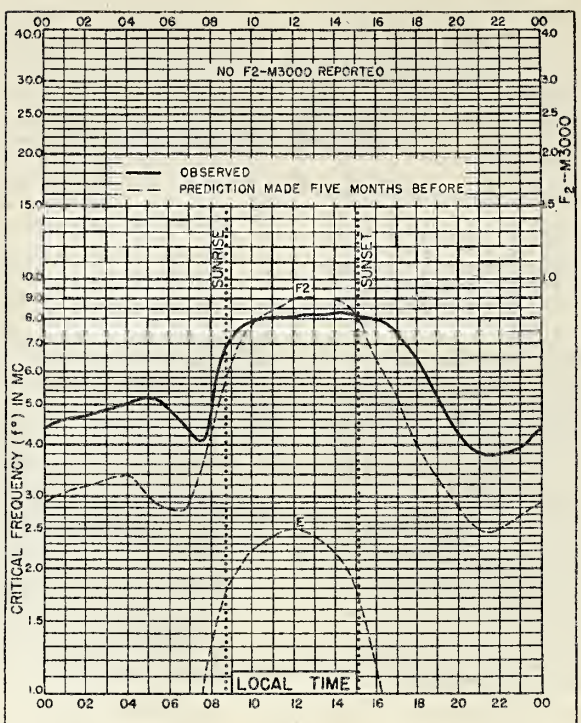

Fig. 45. BURGHEAD, SCOTLAND
57.7°N, 3.5°W DECEMBER 1946

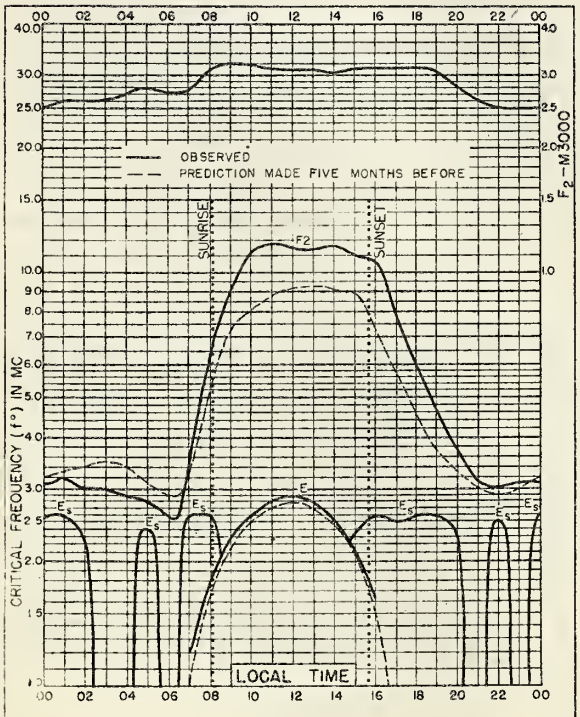

Fig. 46. SLOUGH, ENGLAND
51.5°N, 0.6°W DECEMBER 1946

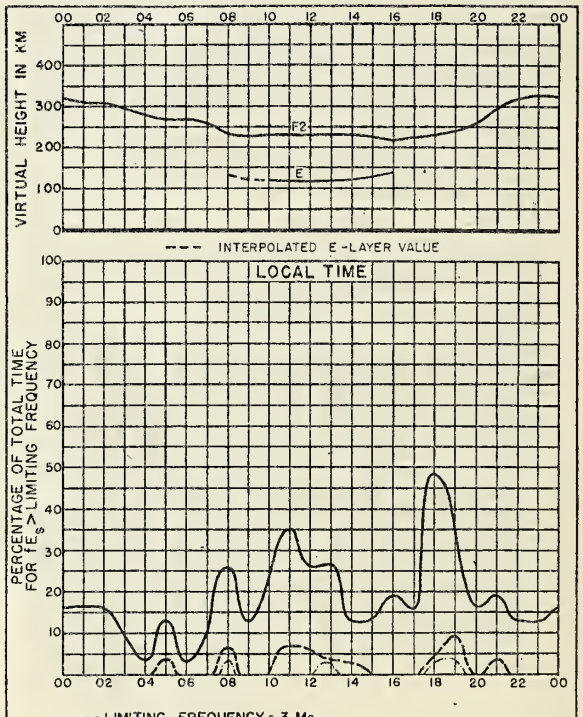

Fig. 47. SLOUGH, ENGLAND DECEMBER 1946

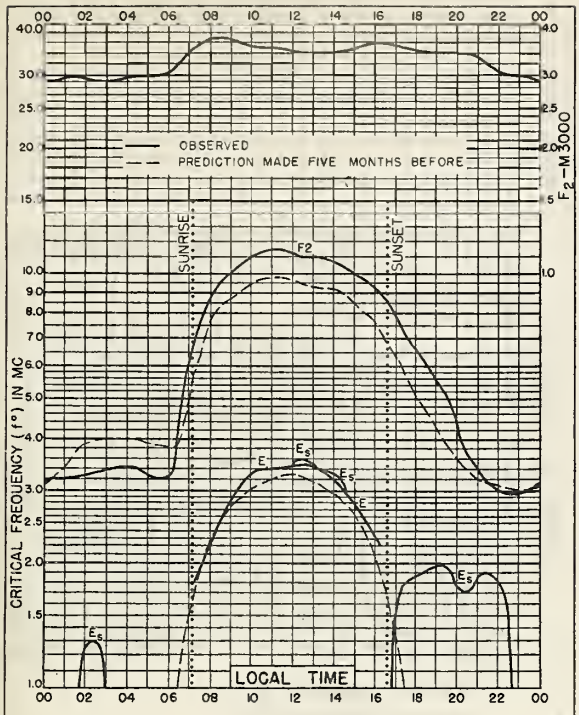

Fig. 48. SHIBATA, JAPAN
37.9°N, 139.3°E DECEMBER 1946

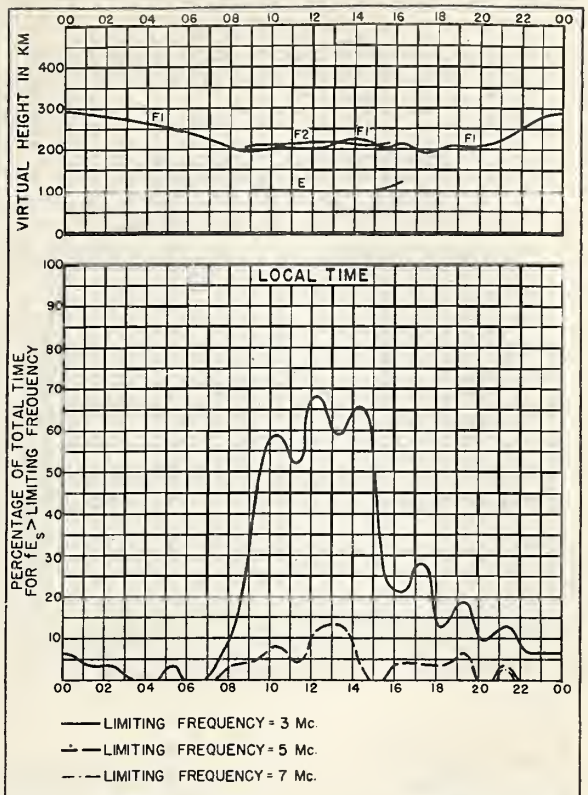

Fig. 49. SHIBATA, JAPAN DECEMBER 1946

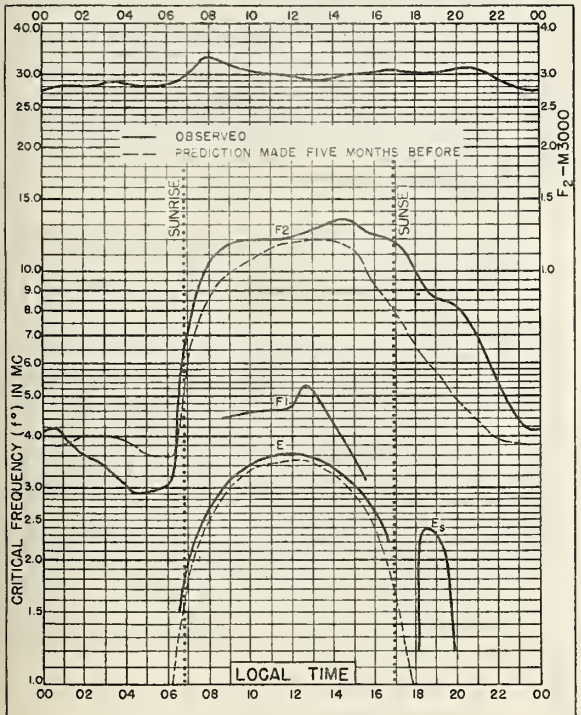

Fig. 50. WUCHANG, CHINA
30.6°N, 114.4°E DECEMBER 1946

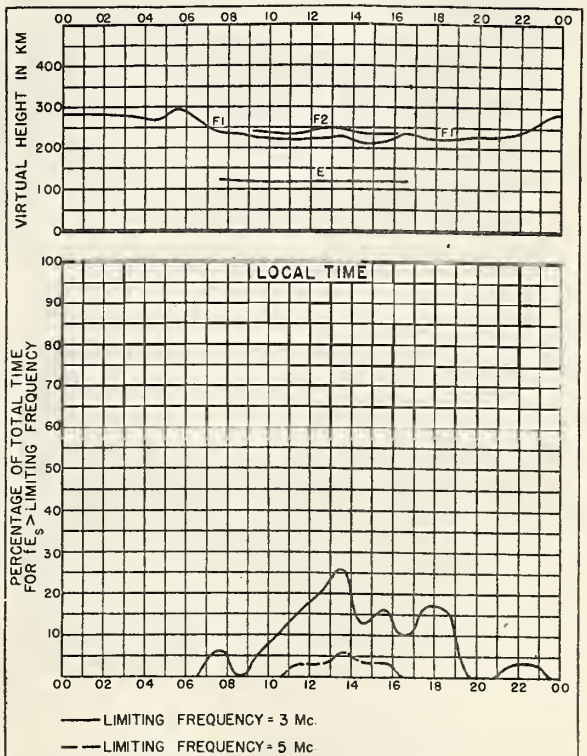

Fig. 51. WUCHANG, CHINA DECEMBER 1946

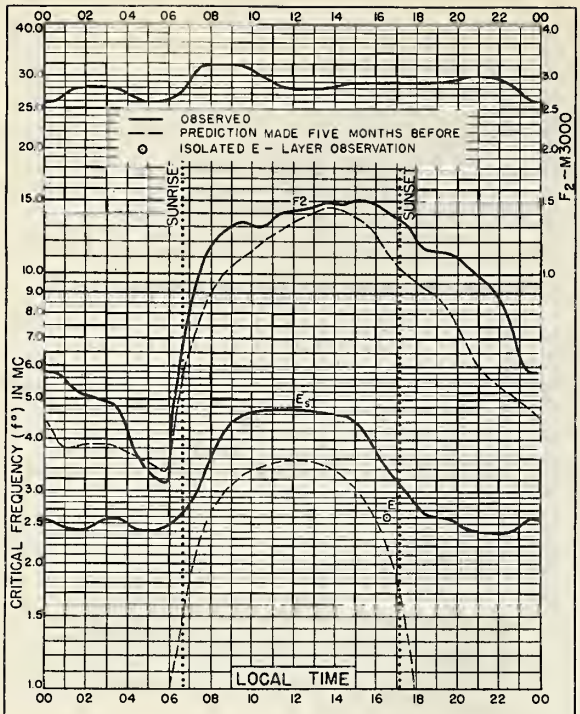

Fig. 52. OKINAWA I.
26.3°N, 127.8°E DECEMBER 1946

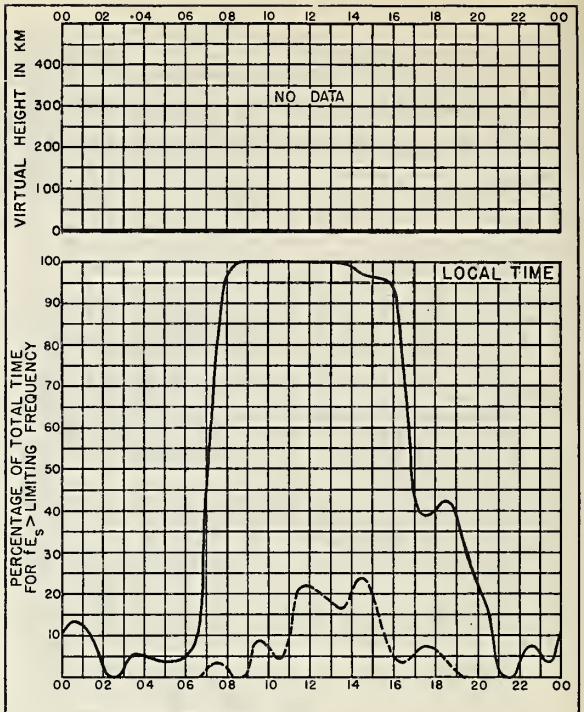

Fig. 53. OKINAWA I. DECEMBER 1946

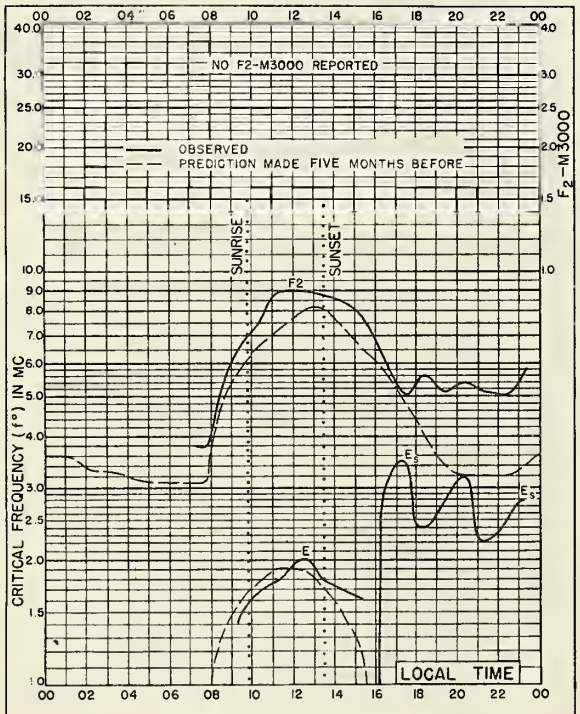

Fig. 54. TROMSO, NORWAY
69.7°N, 18.9E NOVEMBER 1946

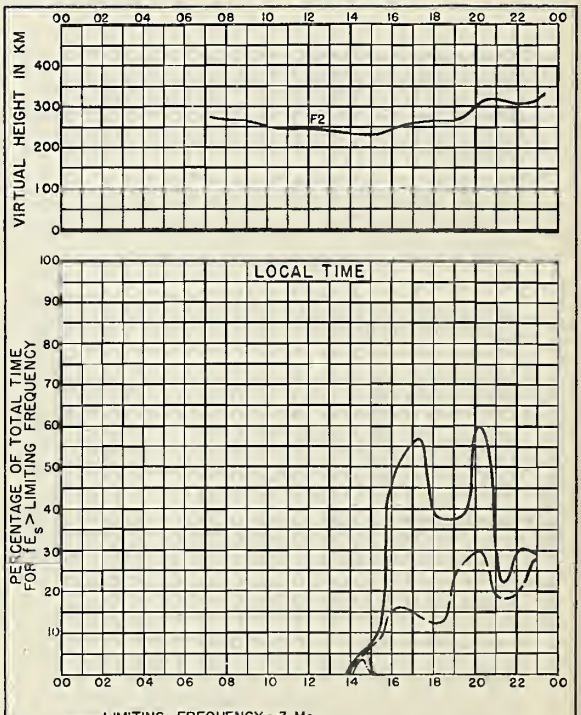

Fig 55. TROMSO, NORWAY NOVEMBER 1946

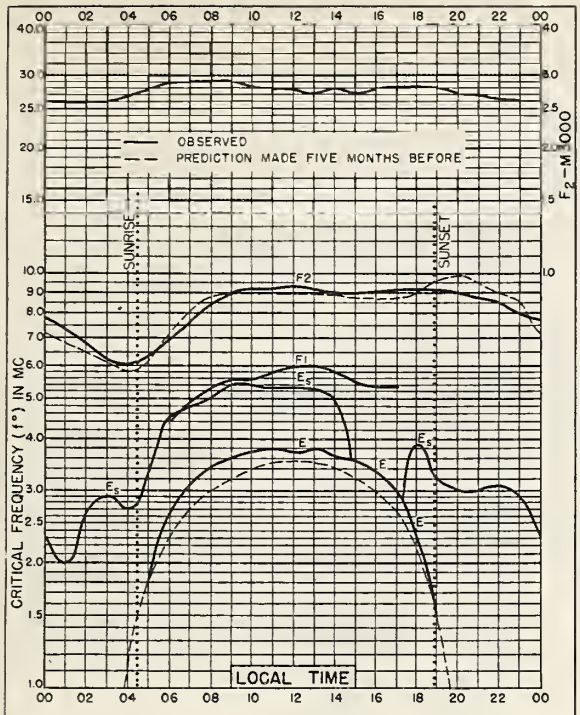

Fig. 56. CHRISTCHURCH, N. Z.
43.5°S, 172.6°E NOVEMBER 1946

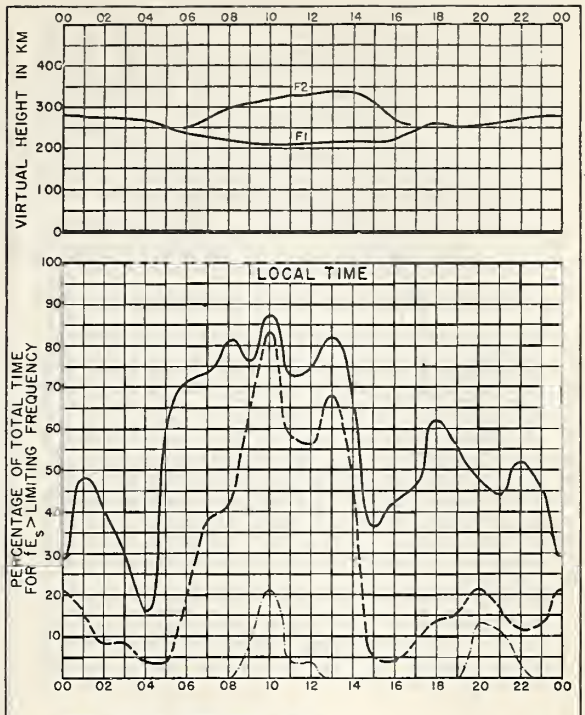

Fig. 57. CHRISTCHURCH, N. Z. NOVEMBER 1946

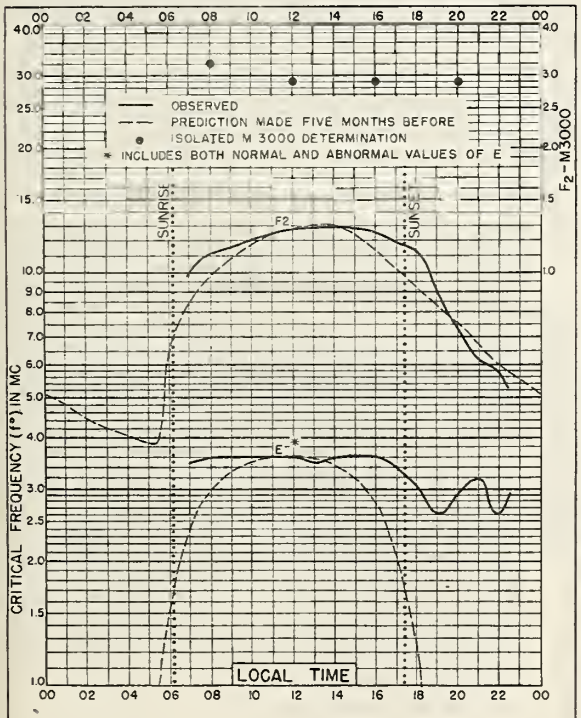

Fig. 58. PESHAWAR, INDIA
34.0°N, 71.5°E OCTOBER 1946

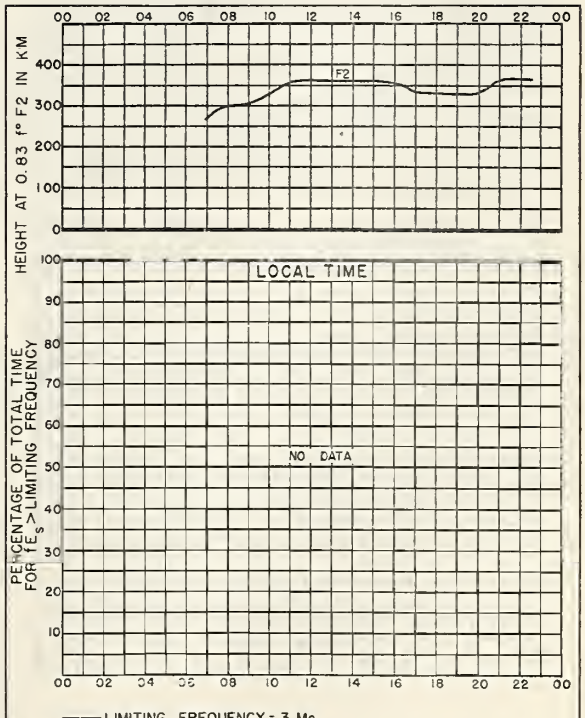

Fig. 59. PESHAWAR, INDIA OCTOBER 1946

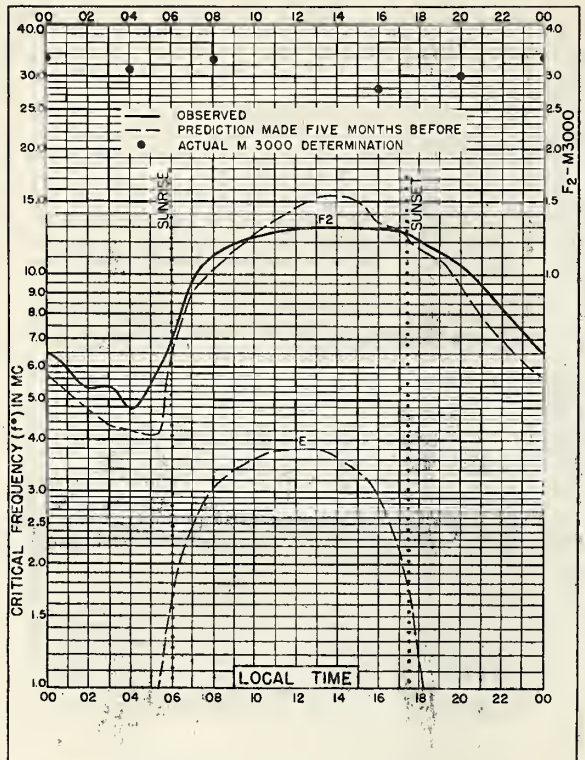

Fig. 60. DELHI, INDIA
28.6°N, 77.1°E
OCTOBER 1946

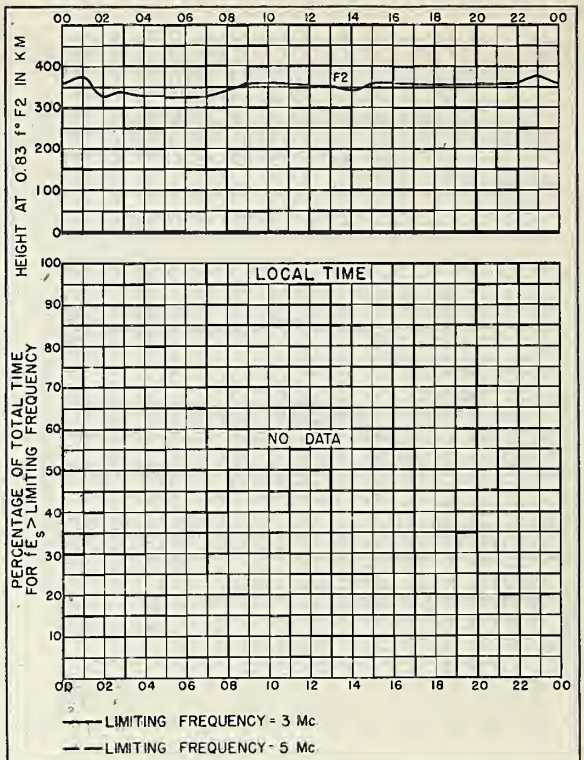

Fig. 61. DELHI, INDIA
OCTOBER 1946

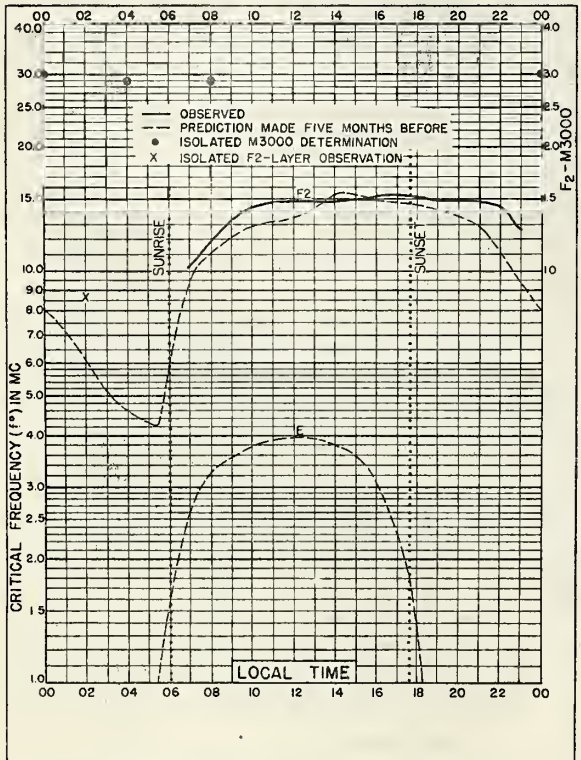

Fig. 62. BOMBAY, INDIA
19.0°N, 73.0°E
OCTOBER 1946

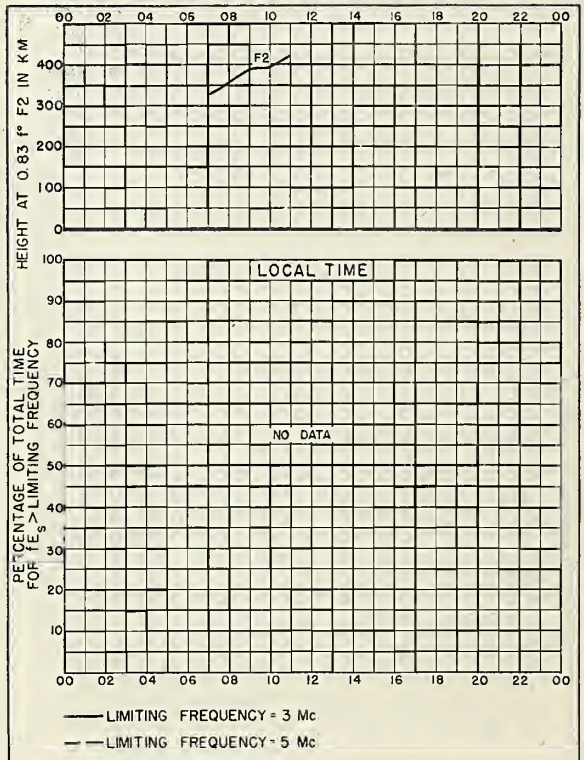

Fig. 63. BOMBAY, INDIA
OCTOBER 1946

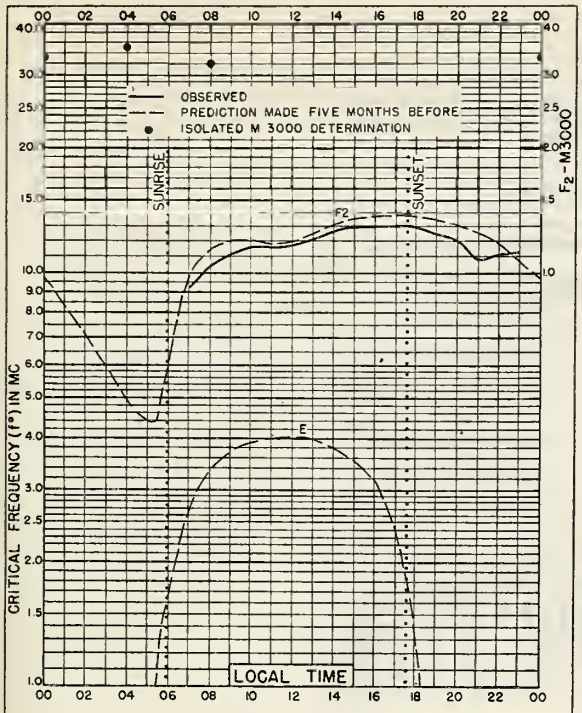

Fig. 64. MADRAS, INDIA
13.0°N, 80.2°E
OCTOBER 1946

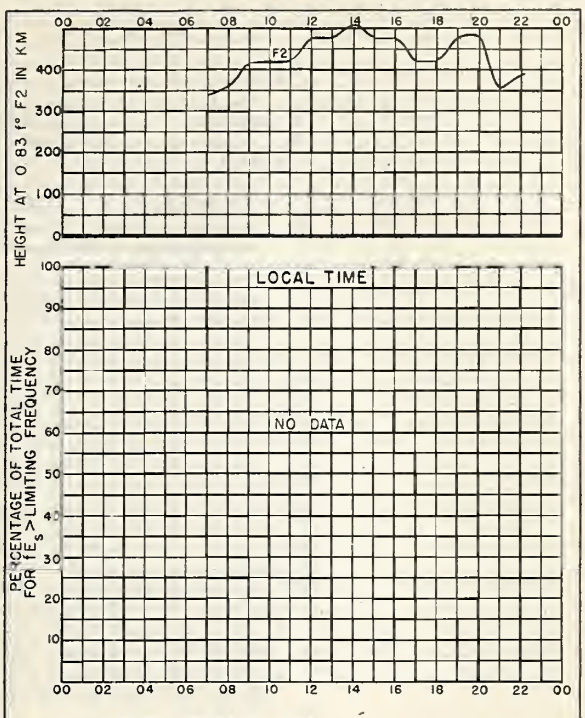

Fig 65. MADRAS, INDIA
OCTOBER 1946

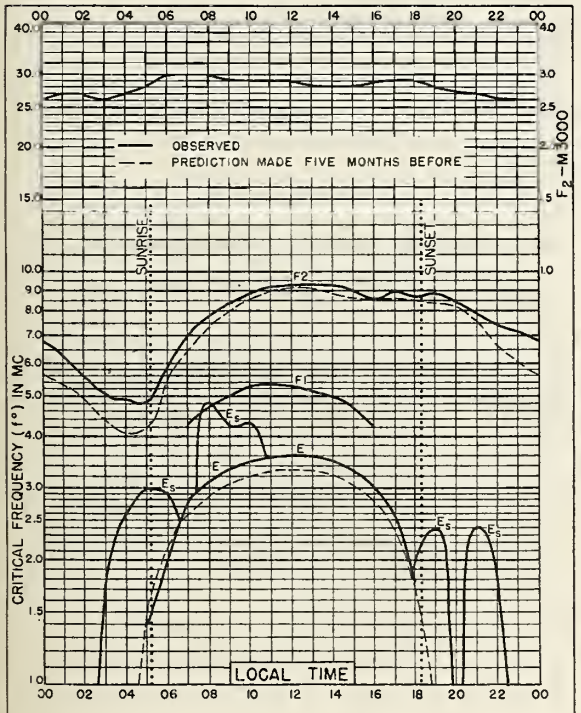

Fig. 66. CHRISTCHURCH, N.Z.
43.5°S, 172.6°E
OCTOBER 1946

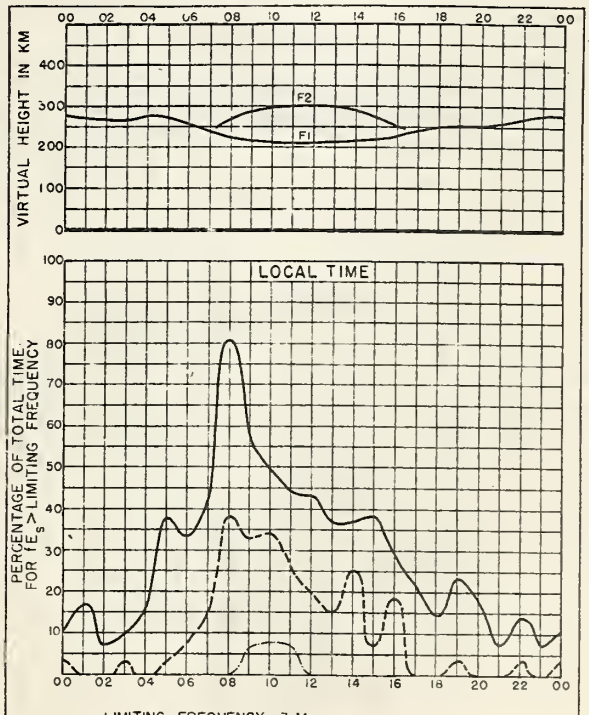

Fig. 67. CHRISTCHURCH, N.Z.
OCTOBER 1946

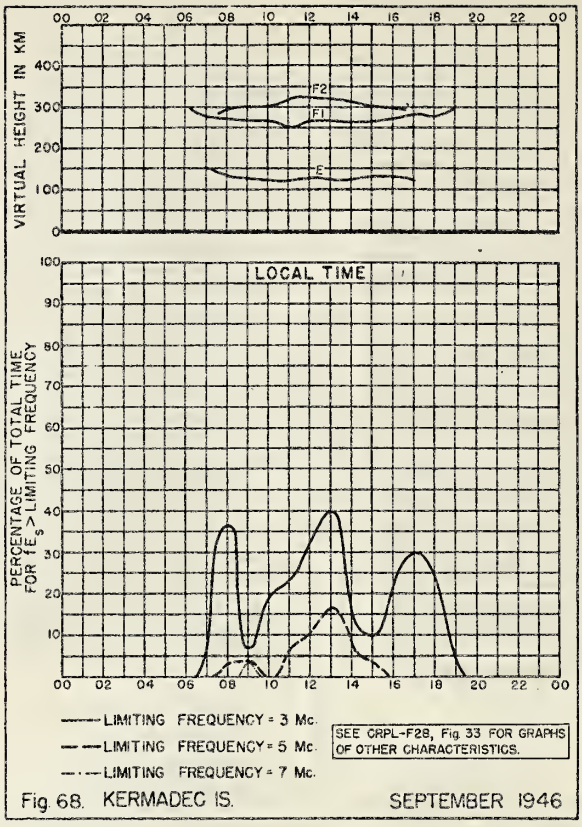

Fig. 68. KERMADEC IS. SEPTEMBER 1946

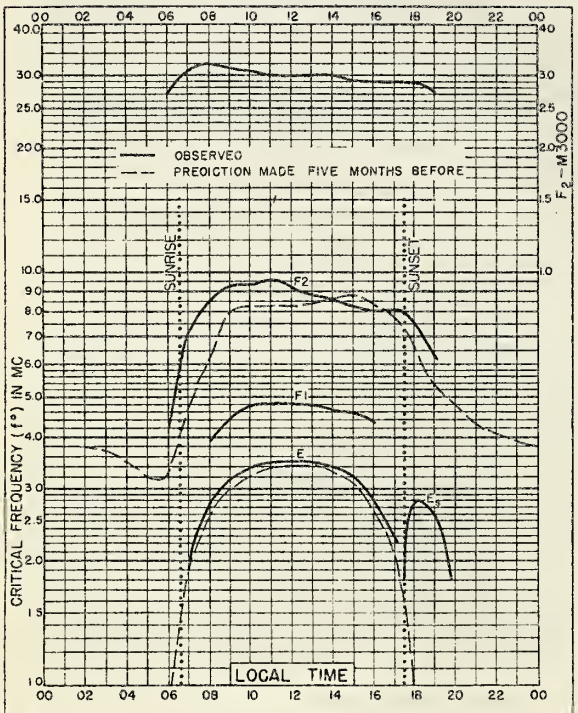

Fig. 69. KERMADEC IS.
29.2°S, 177.9°W AUGUST 1946

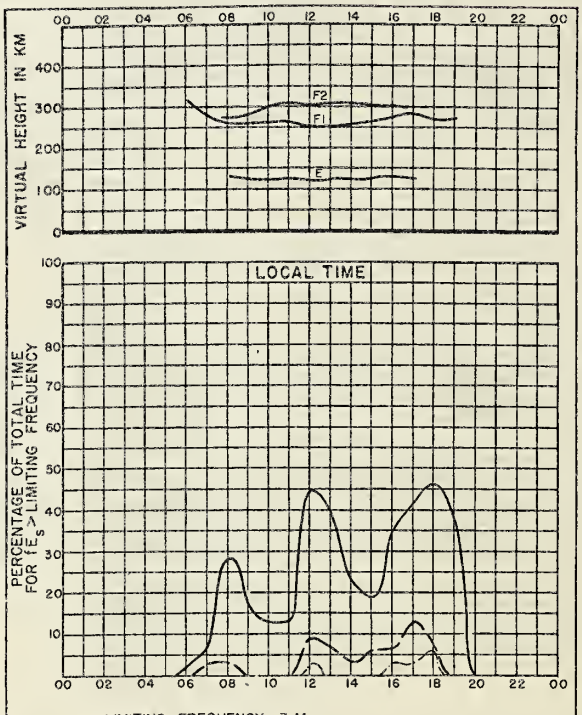

Fig. 70. KERMADEC IS. AUGUST 1946

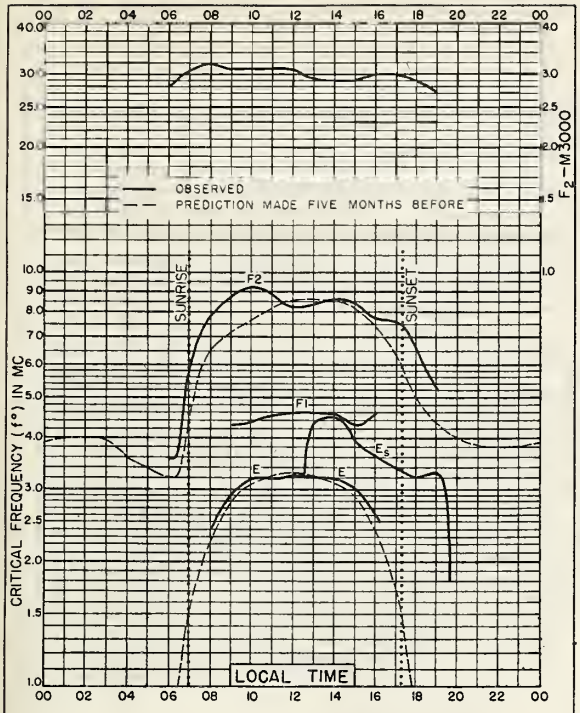

Fig. 71. KERMADEC IS.
29.2°S, 177.9°W JULY 1946

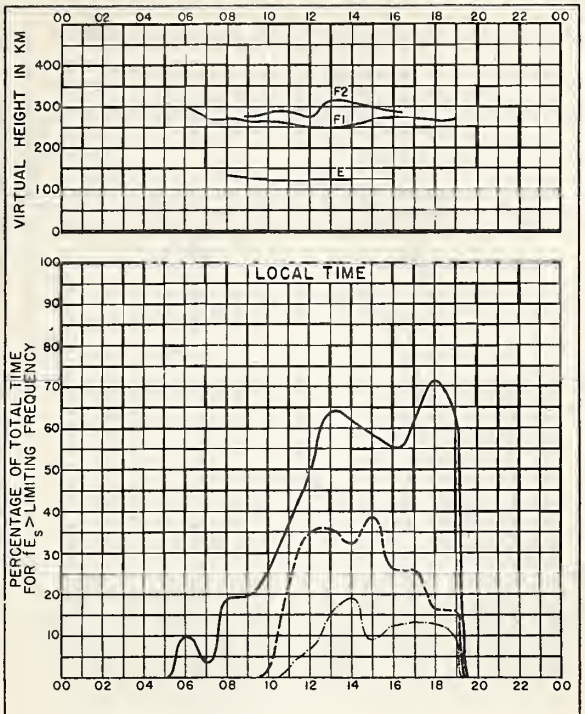

Fig. 72. KERMADEC IS. JULY 1946

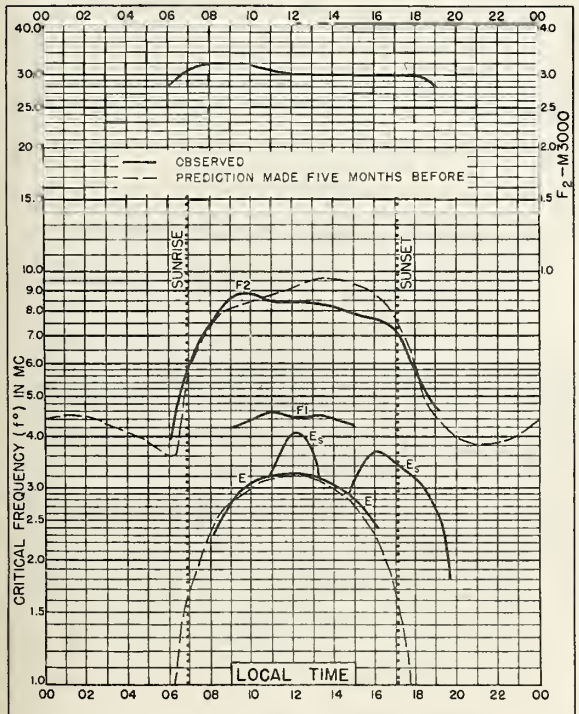

Fig. 73. KERMADEC IS.
29.2°S, 177.9°W JUNE 1946

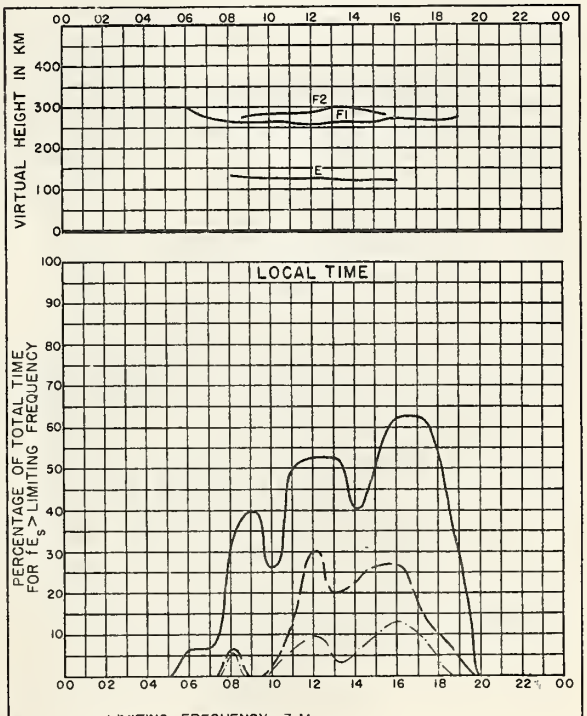

Fig. 74. KERMADEC IS. JUNE 1946

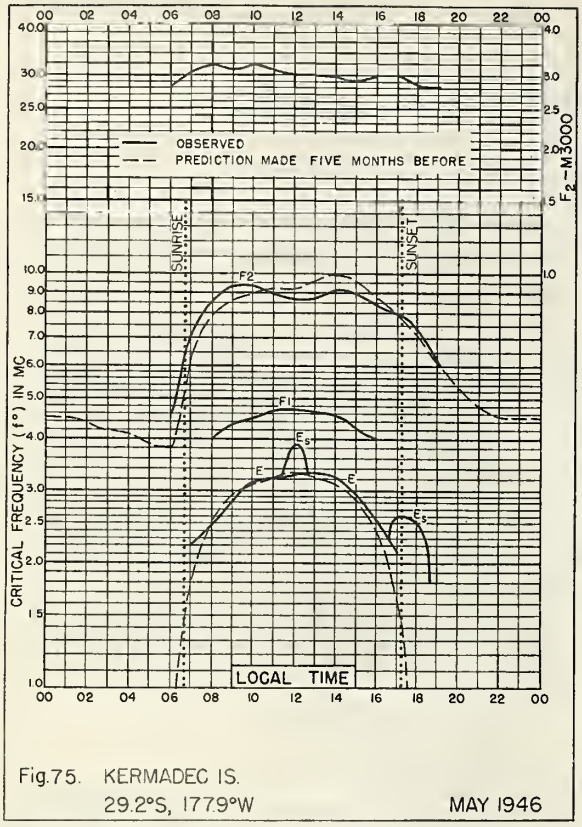

Fig.75. KERMADEC IS.
29.2°S, 177.9°W
MAY 1946

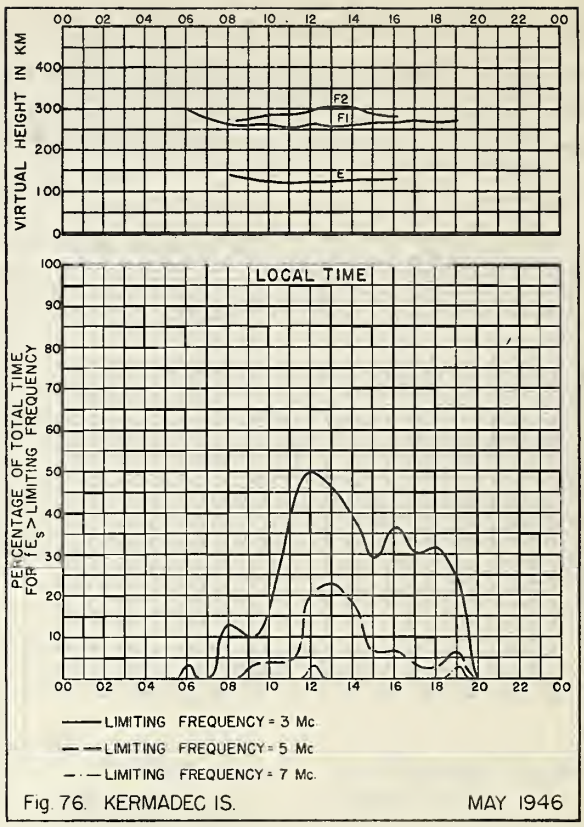

Fig. 76. KERMADEC IS.
MAY 1946

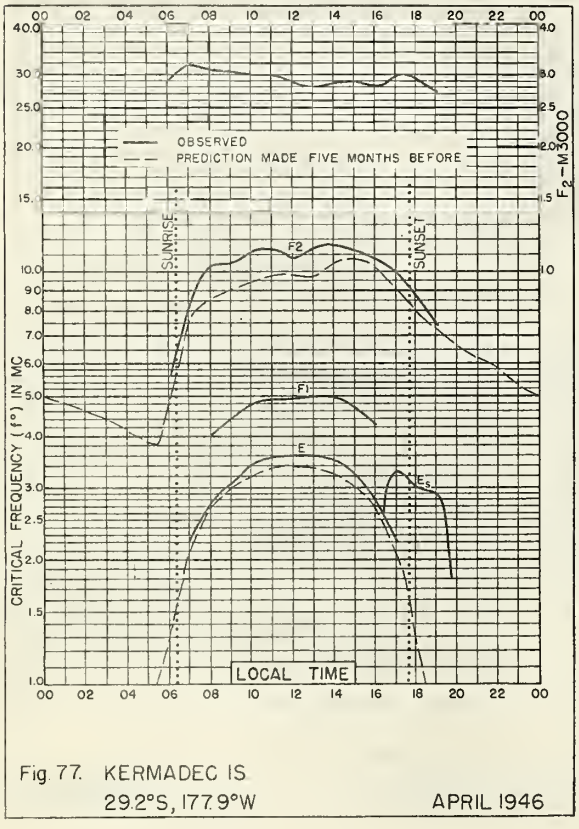

Fig. 77. KERMADEC IS.
29.2°S, 177.9°W
APRIL 1946

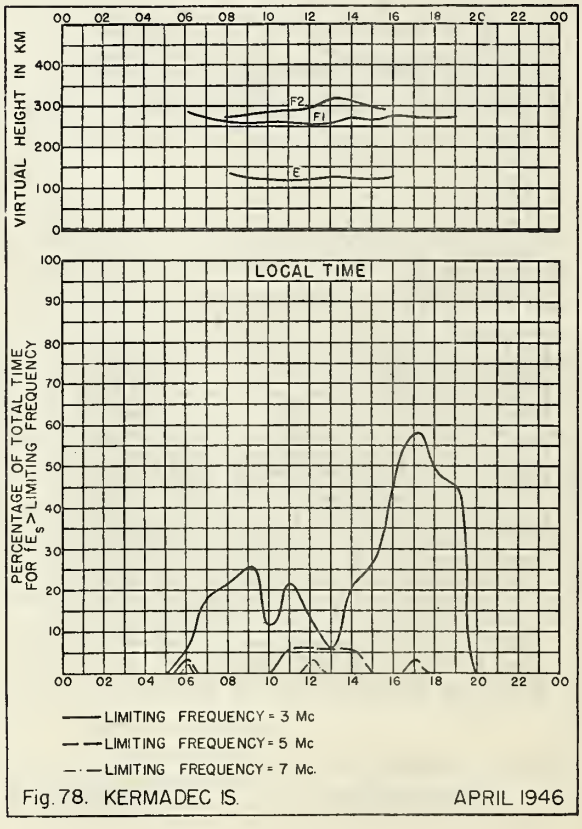

Fig. 78. KERMADEC IS.
APRIL 1946

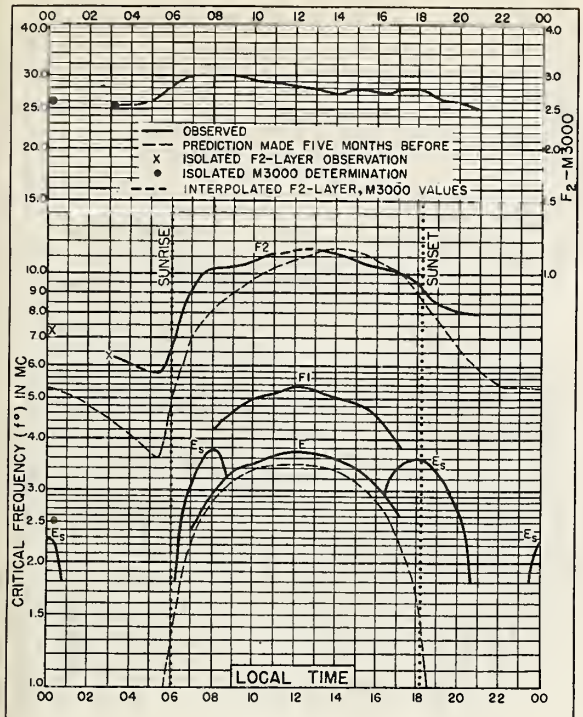

Fig. 79. KERMADEC IS.
29.2°S, 177.9°W MARCH 1946

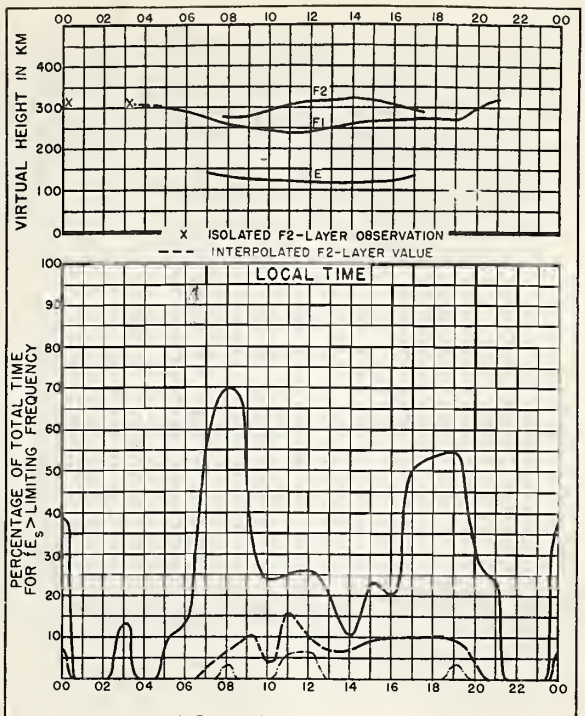

Fig. 80. KERMADEC IS MARCH 1946

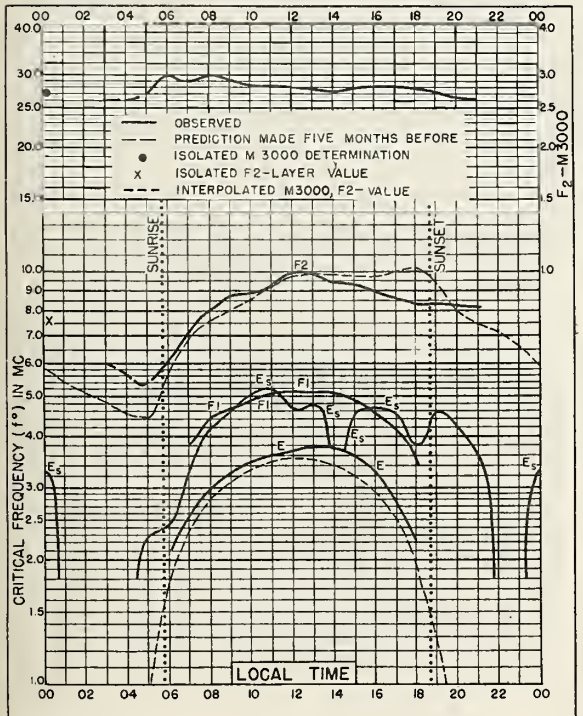

Fig. 81. KERMADEC IS.
29.2°S, 177.9°W FEBRUARY 1946

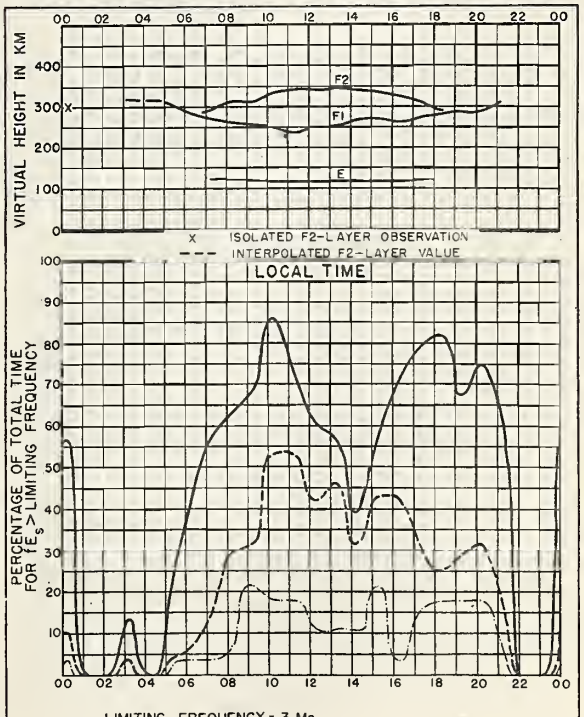

Fig. 82. KERMADEC IS. FEBRUARY 1946

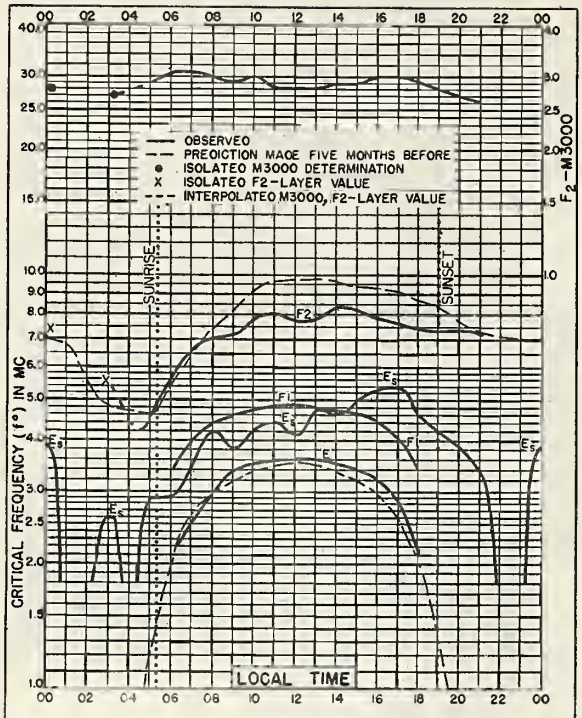

Fig. 83. KERMADEC IS.
29.2°S, 177.9°W
JANUARY 1946

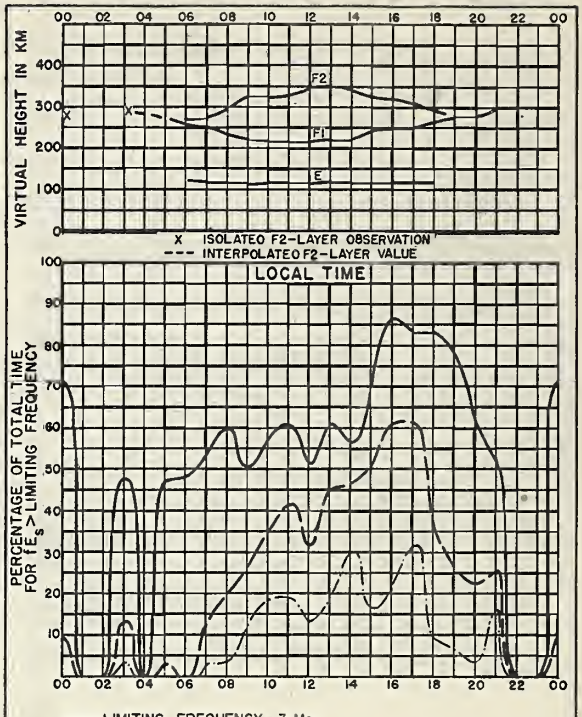

Fig. 84. KERMADEC IS. JANUARY 1946

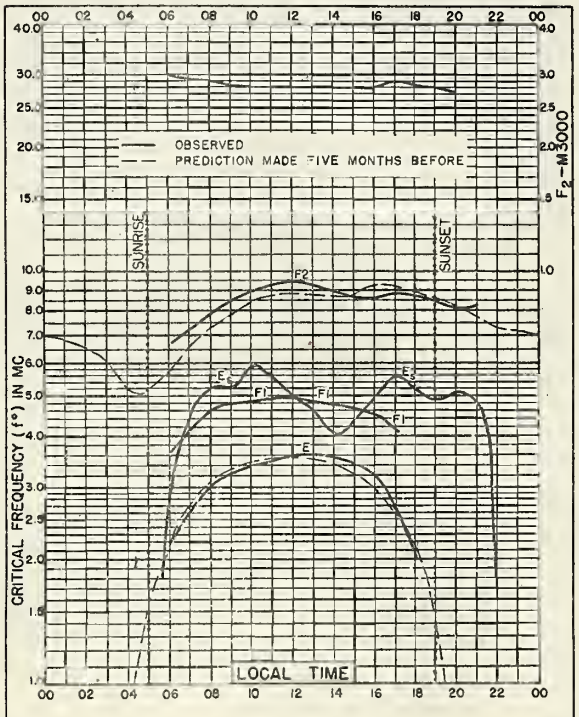

Fig. 85. KERMADEC IS.
29.2°S, 177.9°W
DECEMBER 1945

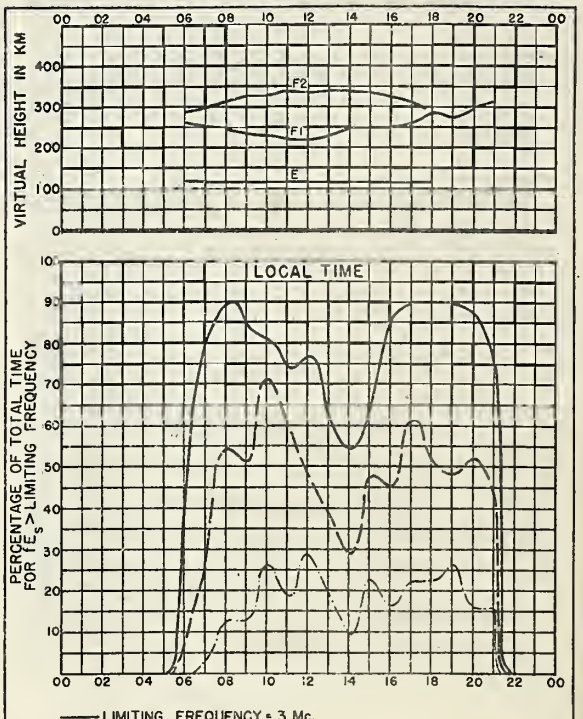

Fig. 86. KERMADEC IS. DECEMBER 1945

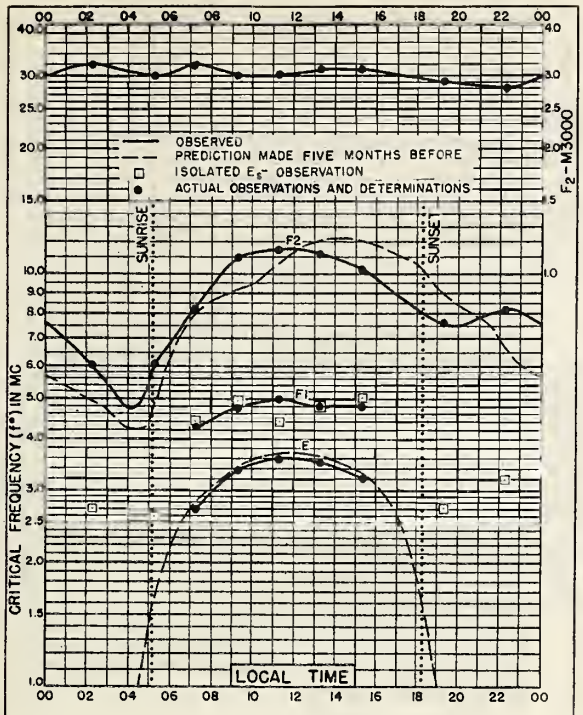

Fig. 87 PITCAIRN I.
25.0°S, 130.0°W NOVEMBER 1945

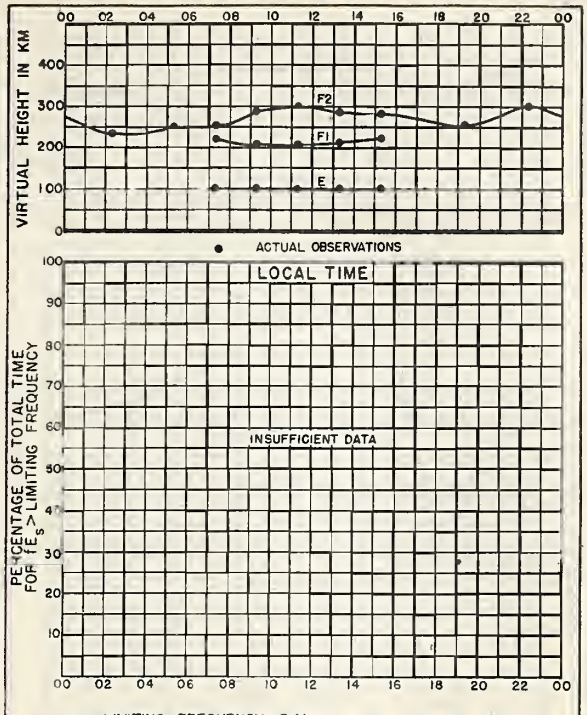

Fig. 88. PITCAIRN I. NOVEMBER 1945

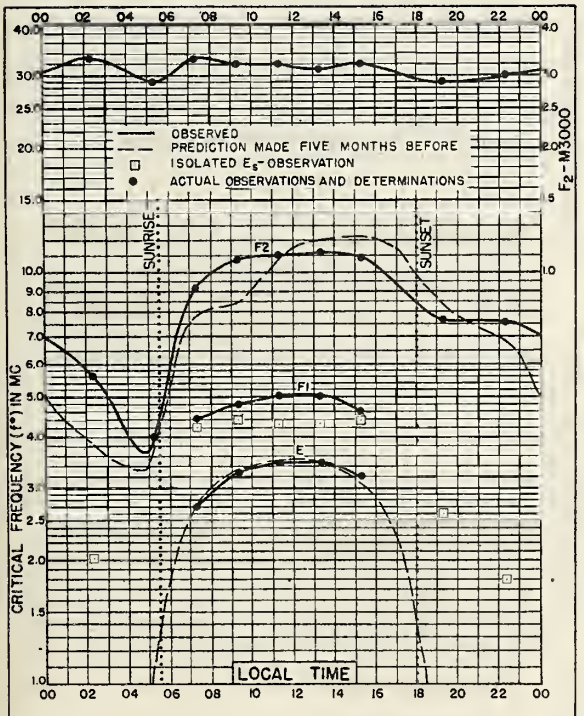

Fig. 89. PITCAIRN I.
25.0°S, 130.0°W OCTOBER 1945

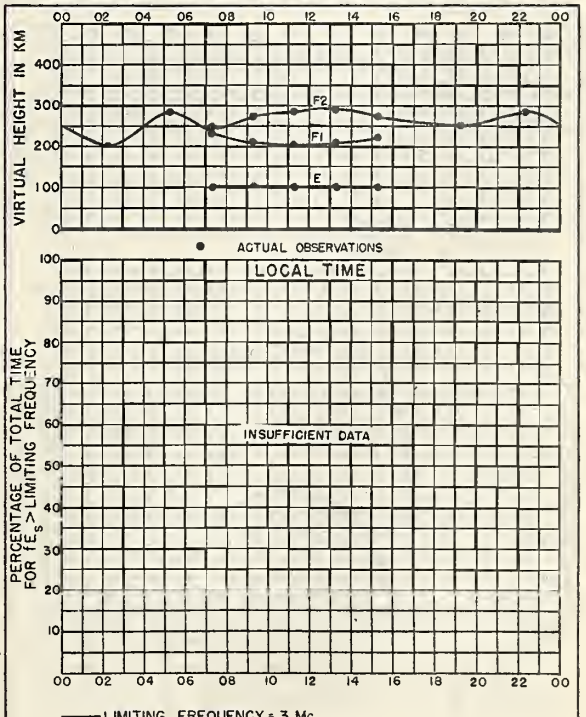

Fig. 90. PITCAIRN I. OCTOBER 1945

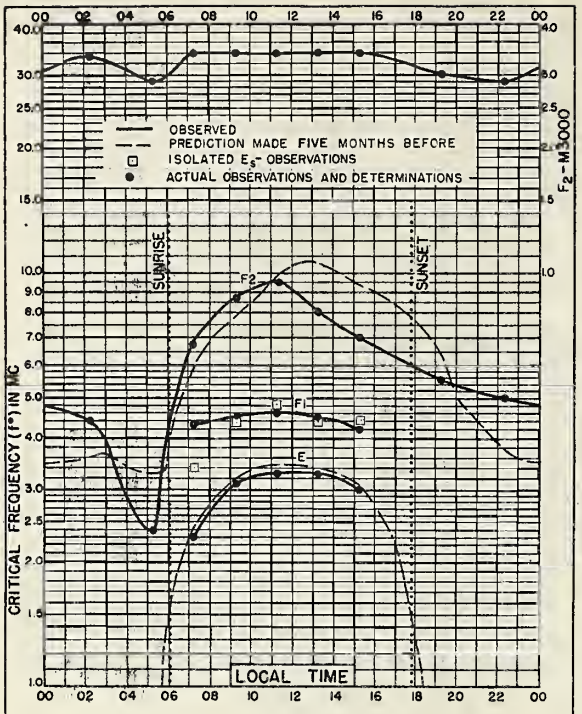

Fig. 91. PITCAIRN I.
25.0°S, 130.0°W SEPTEMBER 1945

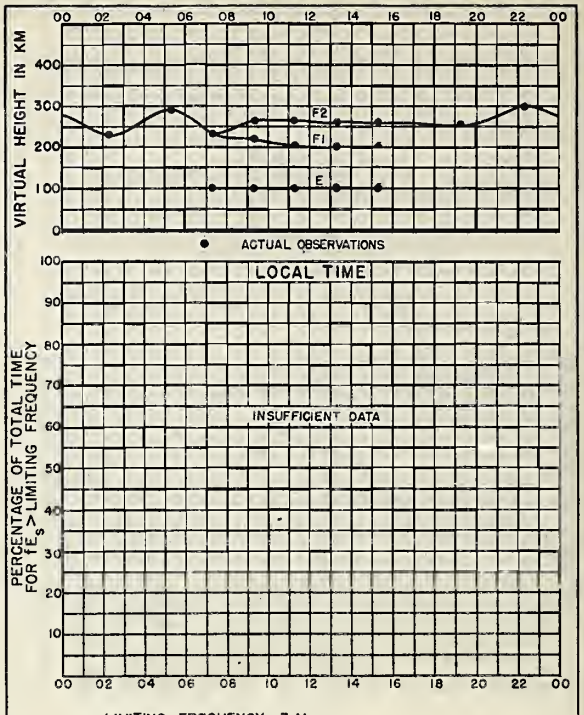

Fig. 92. PITCAIRN I. SEPTEMBER 1945

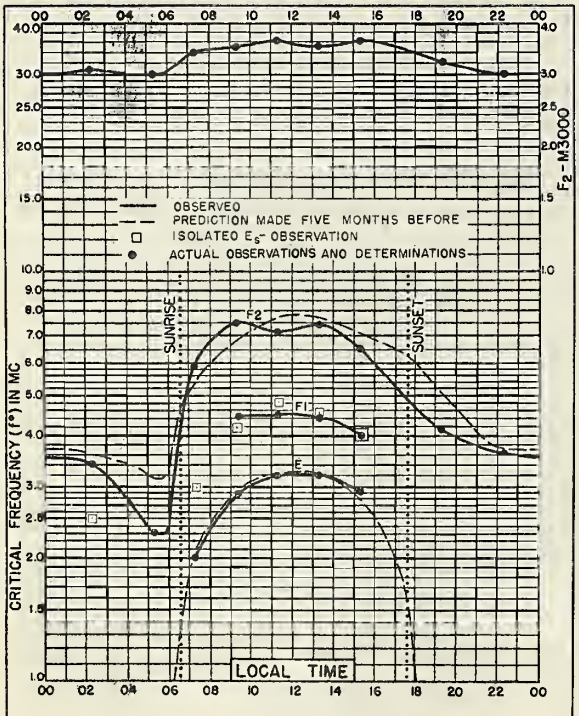

Fig. 93. PITCAIRN I.
25.0°S, 130.0°W AUGUST 1945

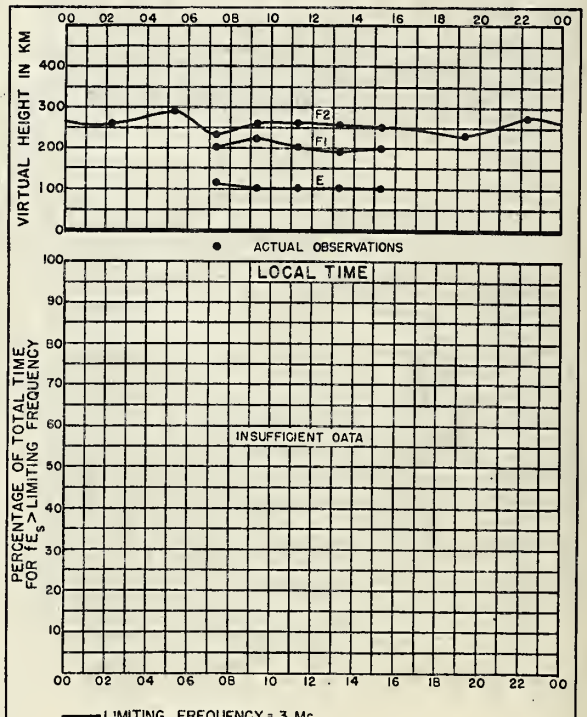

Fig. 94 PITCAIRN I. AUGUST 1945

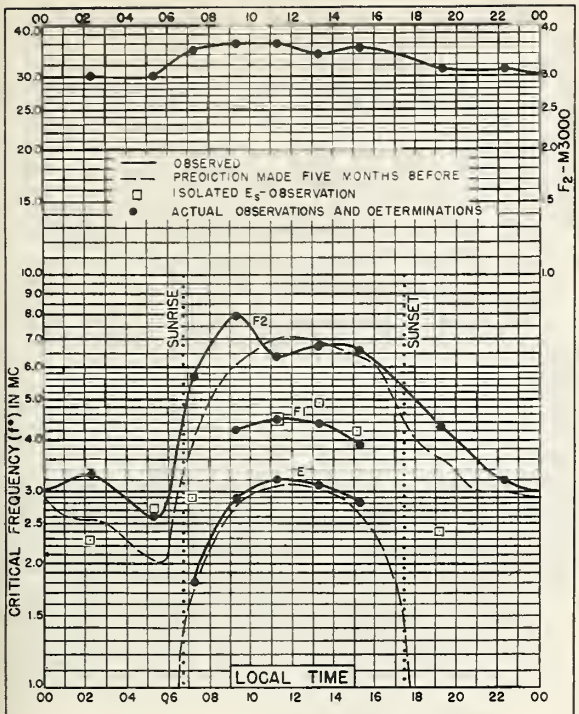

Fig. 95. PITCAIRN I.
25.0°S, 130.3°W JULY 1945

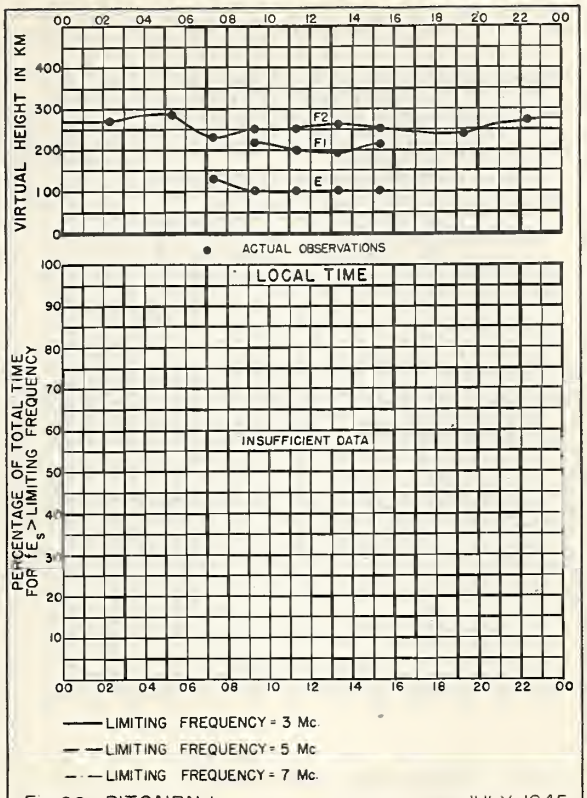

Fig. 96. PITCAIRN I. JULY 1945

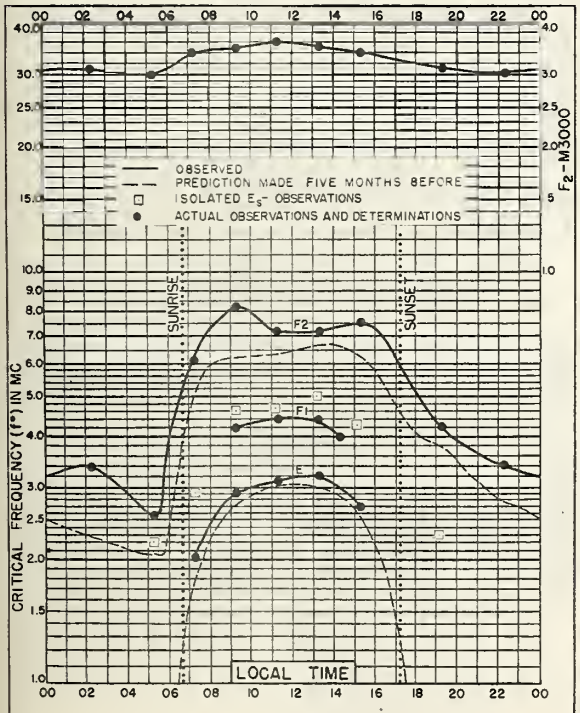

Fig. 97. PITCAIRN I.
25.0°S, 130.0°W JUNE 1945

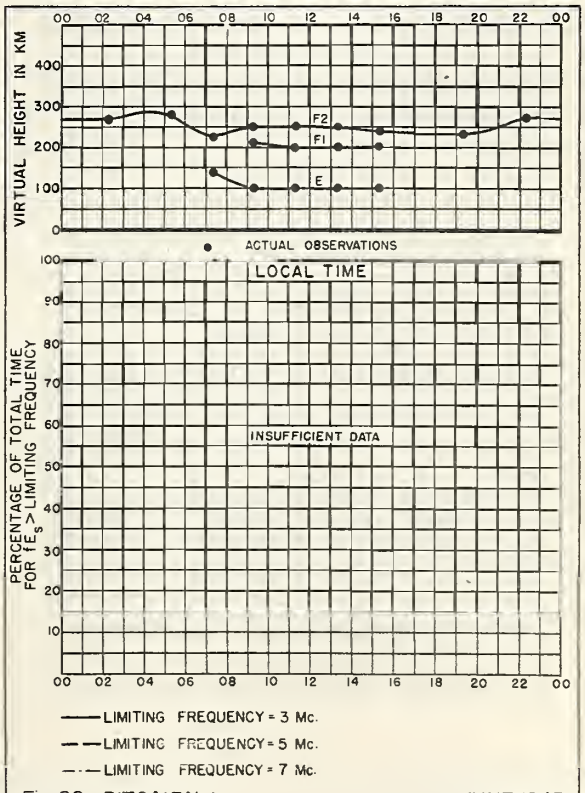

Fig. 98. PITCAIRN I. JUNE 1945

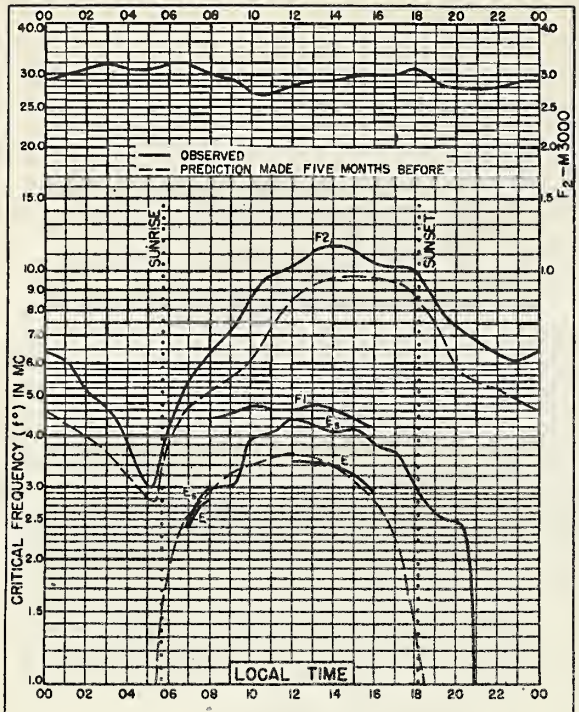

Fig.99. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W MAY 1945

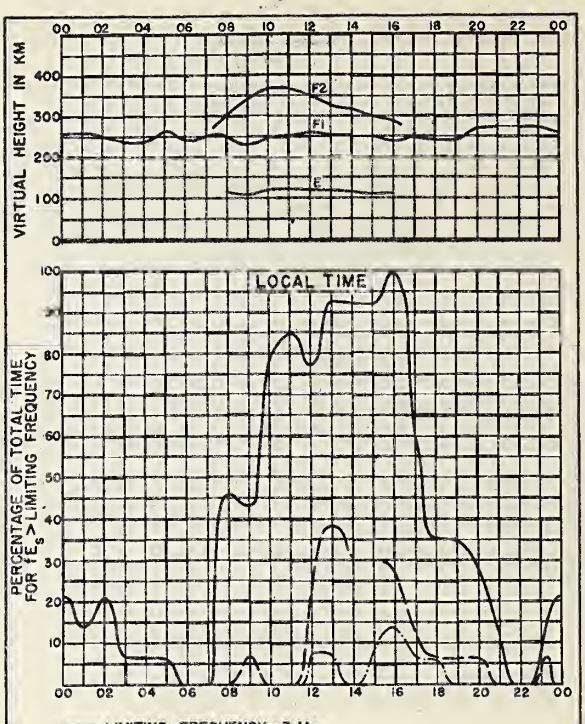

Fig.100. TRINIDAD, BRIT. WEST INDIES MAY 1945

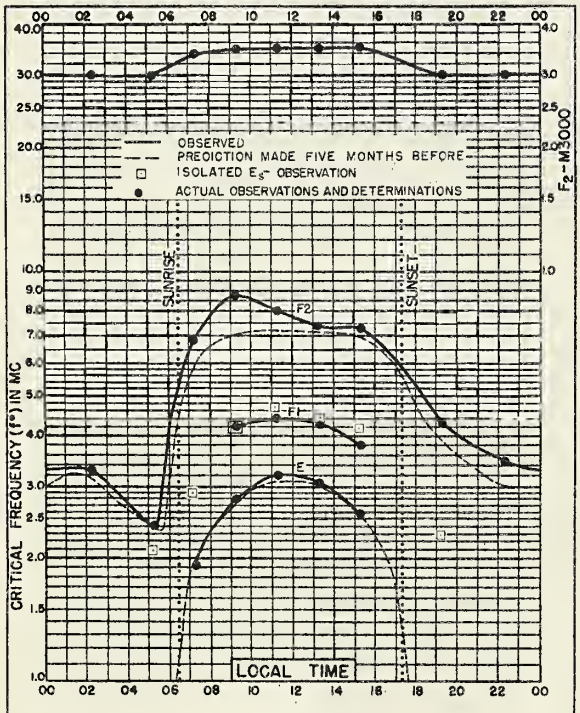

Fig.101. PITCAIRN I.
25.0°S, 130.0°W MAY 1945

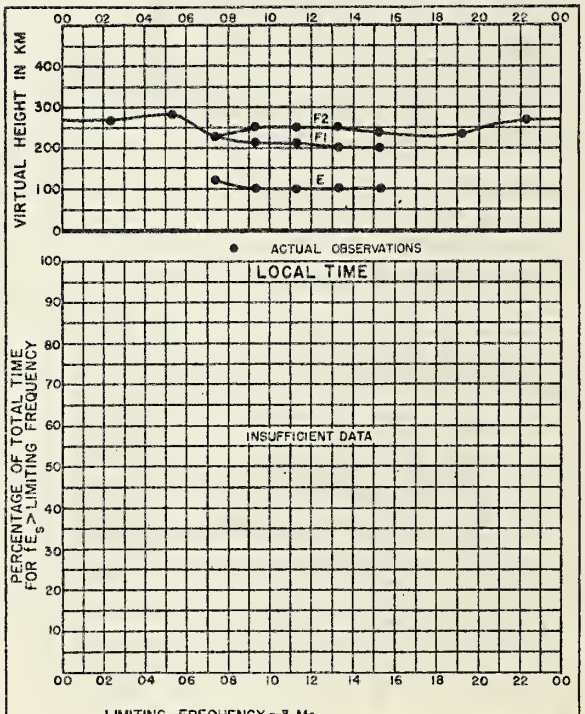

Fig.102. PITCAIRN I. MAY 1945

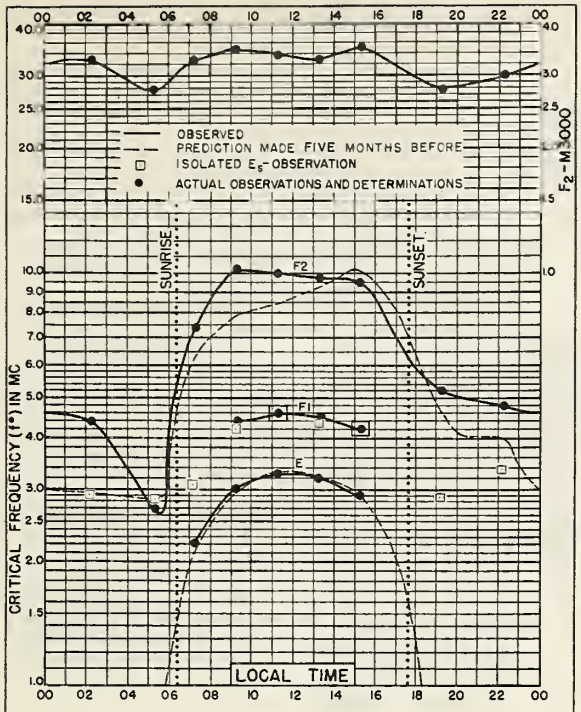

Fig. 103. PITCAIRN I.
25.0°S, 130.0°W
APRIL 1945

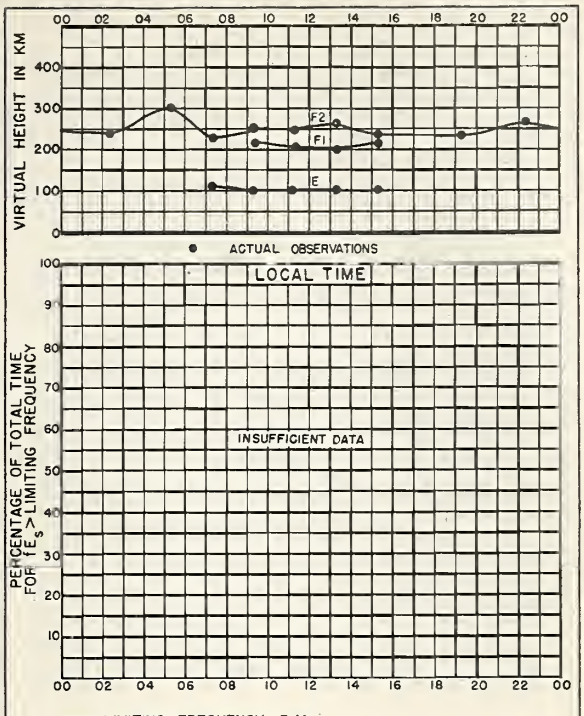

Fig. 104. PITCAIRN I.
APRIL 1945

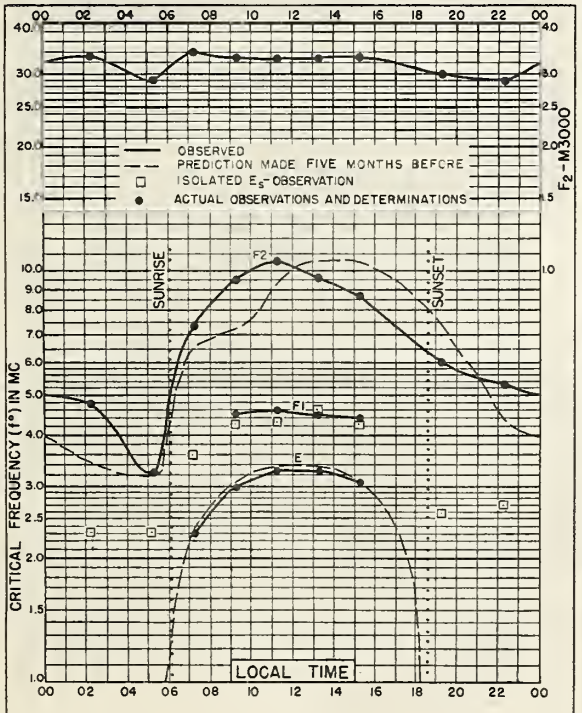

Fig. 105. PITCAIRN I.
25.0°S, 130.0°W
MARCH 1945

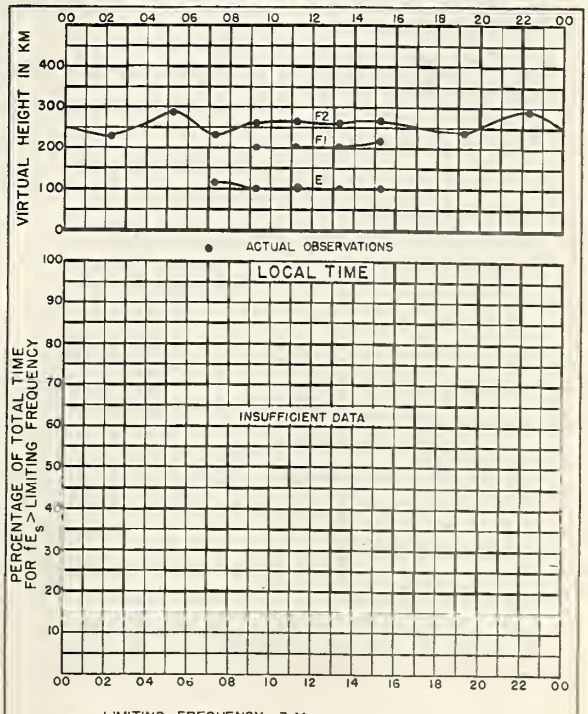

Fig. 106. PITCAIRN I.
MARCH 1945

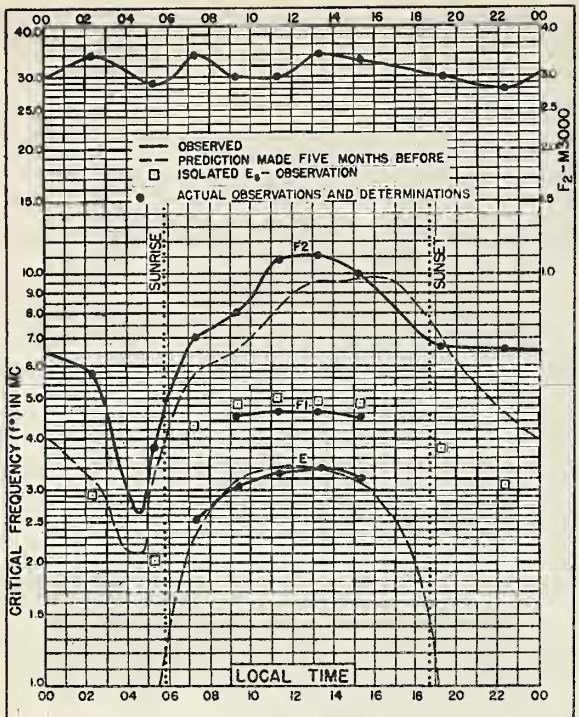

Fig. 107. PITCAIRN I.
25.0°S, 130.0°W FEBRUARY 1945

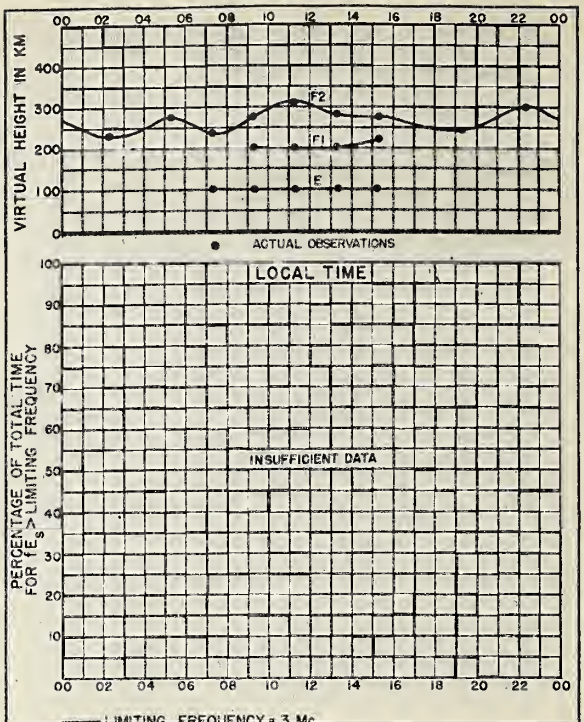

Fig. 108. PITCAIRN I. FEBRUARY 1945

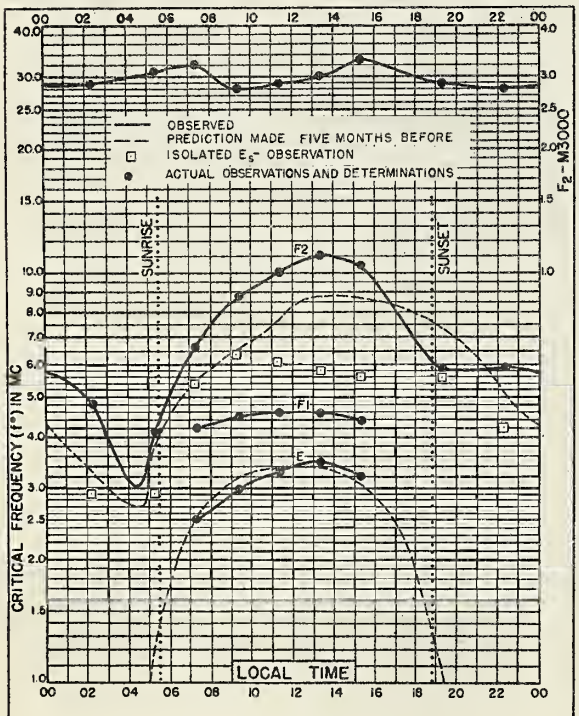

Fig. 109. PITCAIRN I.
25.0°S, 130.0°W JANUARY 1945

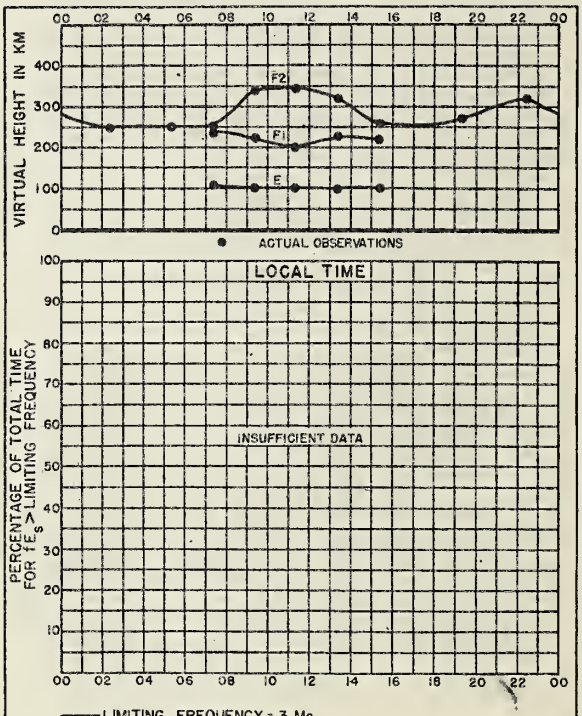

Fig. 110. PITCAIRN I. JANUARY 1945

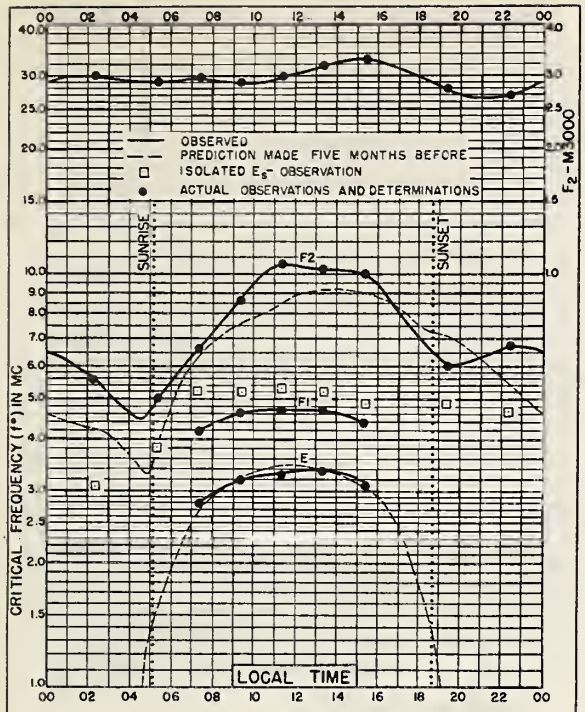

Fig. 111. PITCAIRN I.
25.0°S, 130.0°W DECEMBER 1944

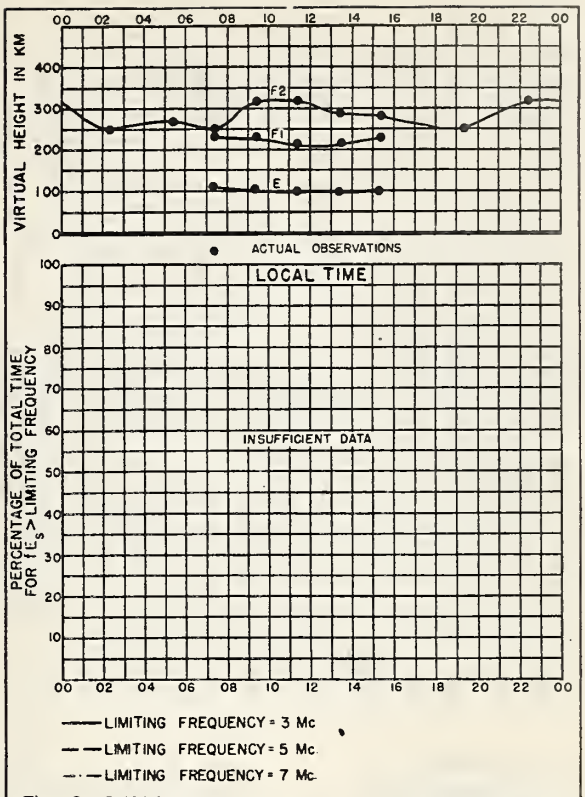

Fig. 112. PITCAIRN I. DECEMBER 1944

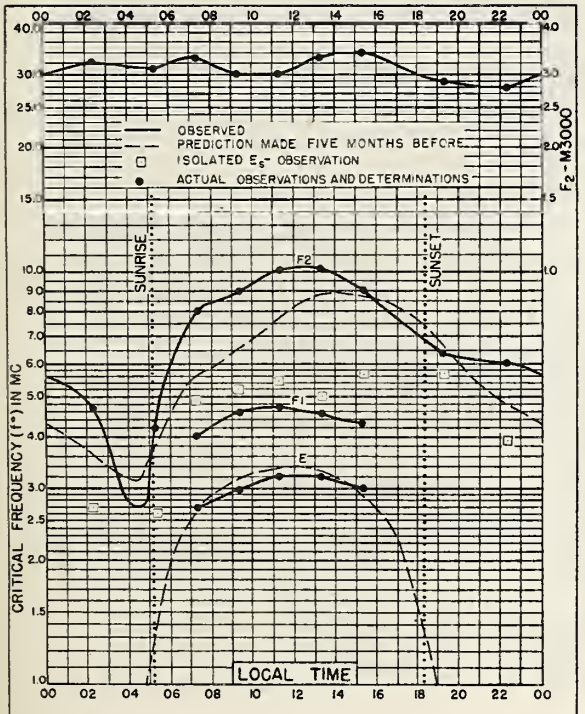

Fig. 113. PITCAIRN I.
25.0°S, 130.0°W NOVEMBER 1944

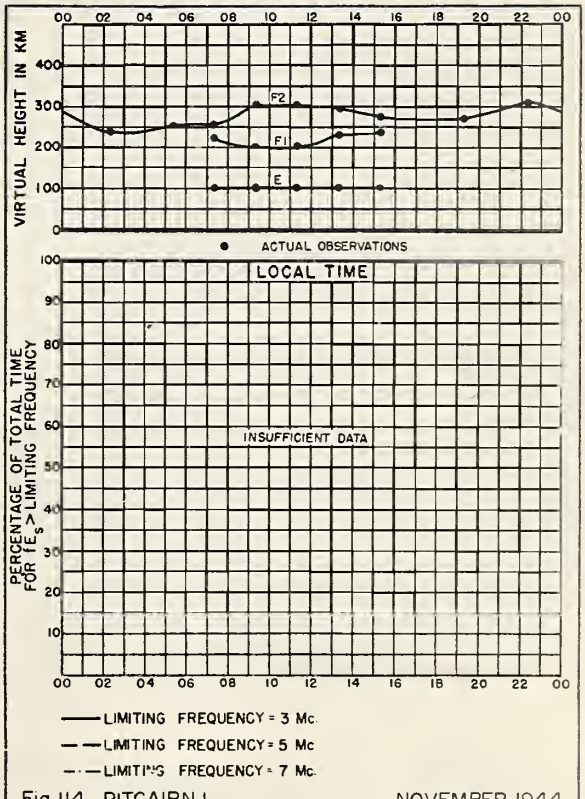

Fig. 114. PITCAIRN I. NOVEMBER 1944

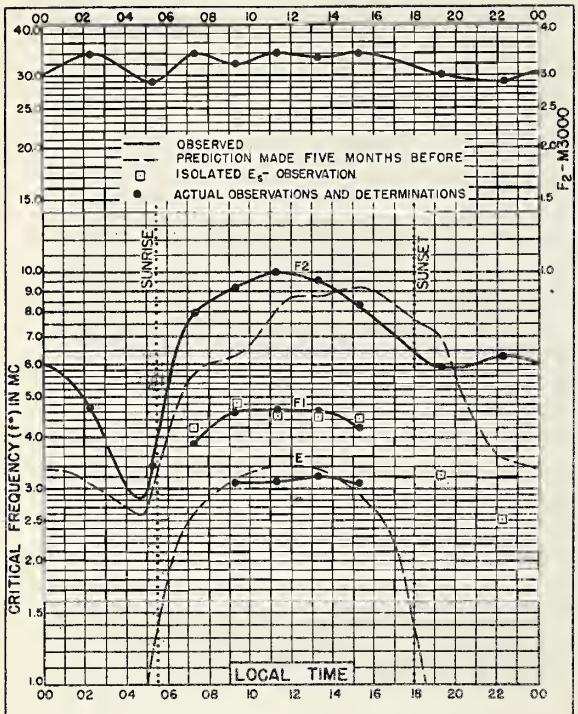

Fig. 115. PITCAIRN I.
25.0°S, 130.0°W OCTOBER 1944

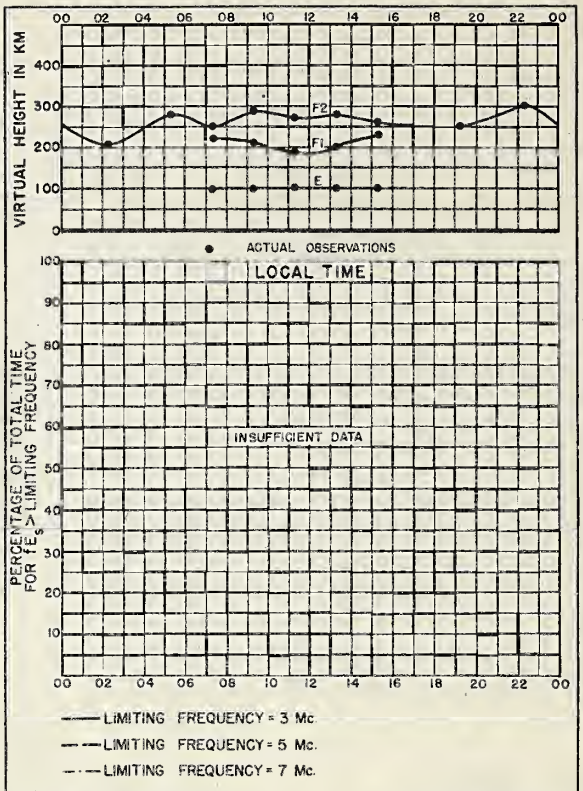

Fig. 116. PITCAIRN I. OCTOBER 1944

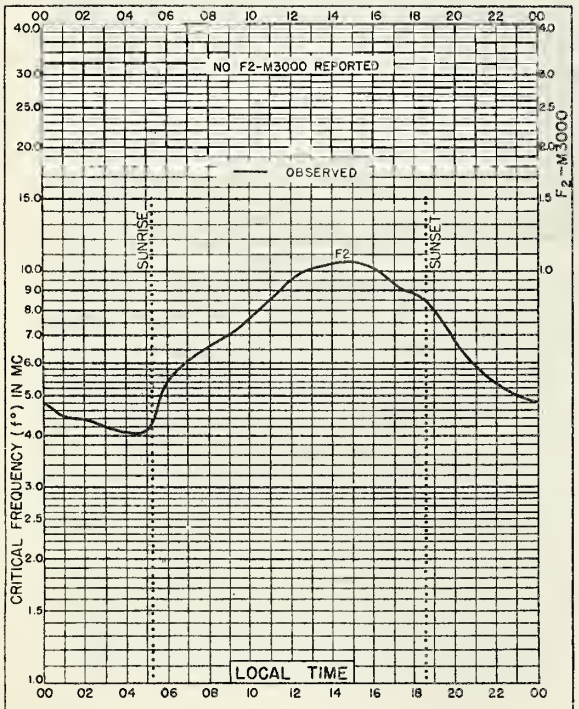

Fig. 117. DELHI, INDIA
28.6°N, 77.1°E MAY 1943

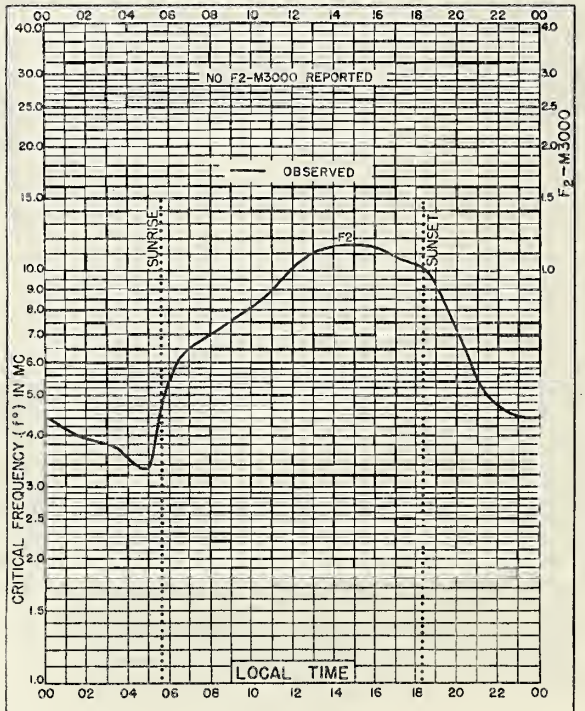

Fig. 118. DELHI, INDIA
28.6°N, 77.1°E APRIL 1943

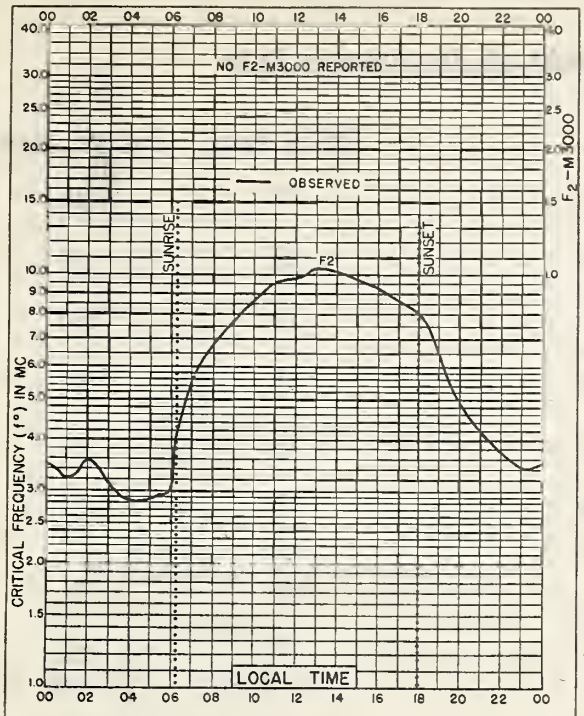

Fig. 119 DELHI, INDIA
28.6°N, 77.1°E MARCH 1943

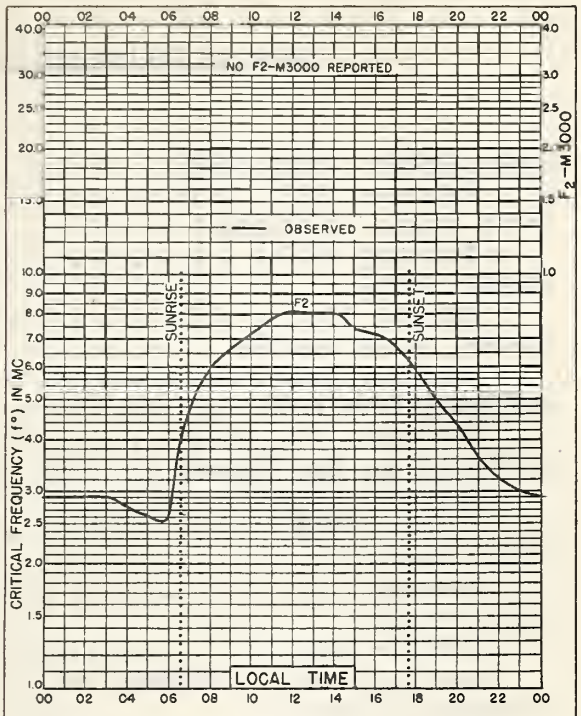

Fig. 120 DELHI, INDIA
28.6°N, 77.1°E FEBRUARY 1943

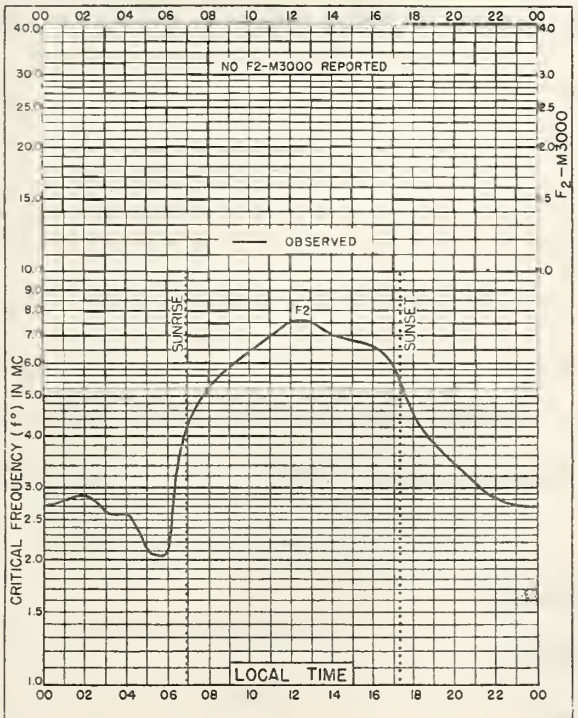

Fig. 121. DELHI, INDIA
28.6°N, 77.1°E JANUARY 1943

Index of Tables and Graphs of Ionospheric Data

Index (Continued)

CRPL and IRPL REPORTS

Daily:
Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic and radio propagation data.

Weekly:
CRPL–J. Radio Propagation Forecast (of days most likely to be disturbed, during following month).

Semimonthly:
CRPL–Ja. Semimonthly Frequency Revision Factors for CRPL Basic Radio Propagation Prediction Reports.

Monthly:
CRPL–D. Basic Radio Propagation Predictions—Three months in advance. (War Dept. TB 11–499– , monthly supplements to TM 11–499; Navy Dept. DNC–13–1 ( ), monthly supplements to DNC–13–1.)
CRPL–F. Ionospheric Data.

Quarterly:
*IRPL–A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL–H. Frequency Guide for Operating Personnel.
Reports on high-frequency standards.
Reports on microwave standards.

Reports Issued in Past:
IRPL Radio Propagation Handbook, Part 1. (War Dept. TM 11–499; Navy Dept. DNC–13–1.)
IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL–G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL–R. Unscheduled reports:
- R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
- R5. Criteria for Ionospheric Storminess.
- R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
- R12. Short Time Variations in Ionospheric Characteristics.
- R14. A Graphical Method for Calculating Ground Reflection Coefficients.
- R15. Predicted Limits for *F*2-layer Radio Transmission Throughout the Solar Cycle.
- R16. Predicted *F*2-layer Frequencies Throughout the Solar Cycle, for Summer, Winter, and Equinox Season.
- R17. Japanese Ionospheric Data—1943.
- R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
- R19. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for June.
- R20. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for September.
- R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
- R22. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for December.
- R23. Solar-Cycle Data for Correlation With Radio Propagation Phenomena.
- R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
- R25. The Prediction of Solar Activity as a Basis for Predictions of Radio Propagation Phenomena.
- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- R28 Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for January.
- R29 and 29–A Revised Classification of Radio Subjects Used in National Bureau of Standards and First Supplement (N. B. S. Letter Circular LC–814 and Supplement, superseding Circular C385).
- R30. Disturbance Rating in Values of IRPL Quality—Figure Scale From A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
- R32. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for February.
- R33. Ionospheric Data on File at IRPL.
- R34. The Interpretation of Recorded Values of *fEs*.
- R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc

IRPL–T. Reports on Tropospheric Propagation.
- T1. Radar Operation and Weather. (Superseded by JANP 101.)
- T2. Radar Coverage and Weather. (Superseded by JANP 102.)

CRPL–T3. Tropospheric Propagation and Radio Meteorology. (Reissue of Columbia Wave Propagation Group WPG–5.)

*Items bearing this symbol are distributed only by U. S. Navy in NONREGISTERED PUBLICATIONS MEMORANDA (NRPM). IRPL–A and –H issued under one cover with NRPM identifying numbers.